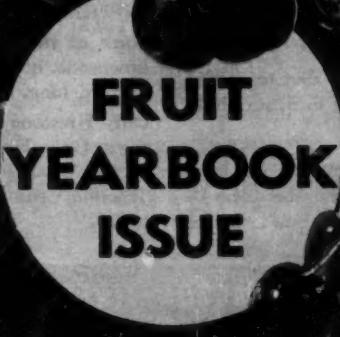


JANUARY

American

1951

FRUIT GROWER



**FRUIT
YEARBOOK
ISSUE**

THIS ISSUE 180,000 COPIES



Look at all these EXTRA FEATURES!

Yes, you can believe your own eyes . . . You can take a good look and *see* why Firestone Tires pull better and last longer.

Notice the bars. You'll see they're curved to cup and grip the soil for a firm, sure hold to eliminate slippage.

Examine the openings between the bars. See how they flare out at the shoulders to permit automatic soil release. You'll notice

there's no "wedged-in" pinching nor bar-end soil cramping.

Look at the treads of these tires. Observe how wide, how flat they are for full traction contact, long, even tread life.

Only Firestone gives you all these extra features. Only Firestone gives you your choice of top quality in either Open Center or Traction Center design. So, before you buy, LOOK!

Listen to the Voice of Firestone on radio or television every Monday evening over NBC

Copyright, 1936, The Firestone Tire & Rubber Co.

• • • **ALWAYS BUY TRACTOR TIRES BUILT BY FIRESTONE,
ORIGINATOR OF THE FIRST PRACTICAL PNEUMATIC TRACTOR TIRE**

Entered as second-class matter at Post Office at Cleveland and Willoughby, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois.

FARM NEWS from DU PONT



Control Scab Thoroughly With Mild DU PONT "FERMATE"

Here's a fungicide that has enabled growers in some instances to produce nearly 75% more marketable scab-free fruit than when they sprayed with sulfurs for scab control. These are some of the reasons why "Fermate" fungicide works so well:

FERMATE allows foliage and trees to grow at high vigor, to produce better yields and better fruit buds.

FERMATE doesn't injure foliage or blossoms, helps improve fruit set.

FERMATE controls black rot, bitter rot, sooty blotch, and cedar-apple rust, in addition to apple and pear scab.

FERMATE is compatible with most pest-control chemicals, including EPN 300 Insecticide and summer oils used for pear psylla.

On other fruits, too, "Fermate" combines effective disease control with the high degree of safety to foliage that makes better yields. The greatest benefits from "Fermate" show up in orchards where it is used for a period of years. "Fermate" is excellent against peach brown rot, apricot jacket rot, cherry leaf spot, raspberry anthracnose and cranberry fruit rots. With grapes, "Fermate" provides such exceptional control of black rot that quality and sugar content of the fruit also improve.



DU PONT FERMATE®

DU PONT CHEMICALS FOR THE FARM INCLUDE:

Fungicides: PARZATE® (Liquid and Dry), FERMATE®, ZERLATE®, Copper-A (Fixed Copper), SULFORON® and SULFORON-X Waterable Sulfurs . . . Insecticides: DEENATE® DDT, MARLATE® Methoxychlor, LEXONET® Benomyl, Hazzardone®, KALANDE® Disulfoton Sulfoxide, EPN 300 Insecticide, Carbamate, Larva Arrestant . . . Water and Root Killers: AMMATE® 2,4-D, TCA and 2,4,5-T . . . Also: DuPont Cotton Dies, DuPont Sprayer Sticker, PARMONE® Fruit Drop In-Mister, and many others.

*REG. U. S. PAT. OFF.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.



MITES WERE FAR LESS OF A PROBLEM this past season to fruit growers who used new DuPont EPN 300 Insecticide. It provides quick action and long-lasting control; one or two applications a season are usually enough. EPN 300 controls red mite, Pacific mite, two-spotted mite and Willamette mite.

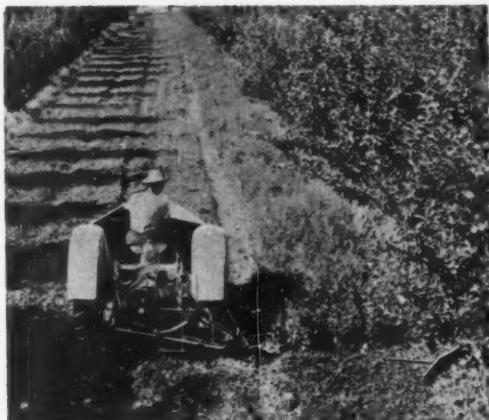


THE OUTSTANDING CONTROL FOR CHERRY FRUIT FLY and fruit worm is now DuPont "Marlate" methoxychlor insecticide. You can use "Marlate" close to harvest because the residue is no hazard to the people who eat the fruit. "Marlate" provides this same safety factor in controlling insects on early apples, peaches and other fruits as well as on vegetables and forage crops. On dairy animals, too, it's the residual fly spray recommended by the U.S. Department of Agriculture.



See your dealer now for DuPont "Fermate," "Marlate," EPN 300 and other pest-control products. Ask him for free brochures on those of special interest to you, or write DuPont, Gruselli Chemicals Dept., Wilmington, Del.; 1321 National City Bank Bldg., Cleveland 14, Ohio.

Low-Cost Care... Everywhere



...In FLORIDA



A favorite team in Florida. The fast 3-plow Case "DO" tractor and "OBL" harrow cut costs in citrus groves. For heavier soils and other areas, your Case dealer offers heavy-duty and fixed-angle offset disk harrows in many sizes, equipped for hydraulic or mechanical control.

Built for big value . . . because every part is made a bit better than might seem necessary . . . Case tractors last long, are economical to run and keep up. Fuel economy that lasts, a moderate-speed engine, bearings adjustable from outside, replaceable cylinder sleeves, complete dust sealing throughout—all these add up to what counts most in a tractor—**LOW TOTAL POWER COST.** Four power sizes and 21 models, to fit your exact needs. See your Case dealer right away.

...In UTAH

Whatever you grow on tree or vine—whatever your soil—wherever you are located—Case orchard and grove tractors and implements can help you keep costs down. In Utah, as all over the nation, owners are finding that the fast work, low fuel consumption, and eager power of the low-cost 2-plow Case "VAO" tractor (left) keep their costs down.

Hydraulic control and simple 3-point Eagle Hitch are standard equipment on the "VAO." With them you can hook up to such Latch-On implements as lift-type offset and tandem disk harrows in a minute or so right from tractor seat. Seven-foot mower shown here. See them at your Case dealer's now!

...In MICHIGAN



Case springtooth harrows are built with extra clearance, so they seldom clog. Choice of medium and heavy-duty Case tandem disk harrows, as well as offset type, fits diverse conditions. Tractor shown here in Michigan peaches is the full 2-plow Model "SO."



Send for FREE CATALOGS AND FOLDERS..

Get latest tractor catalog, implement folders. Mark machines that interest you; write in margin any others you need. Address: I. C. Case Co., Dept. A13, Racine, Wis.

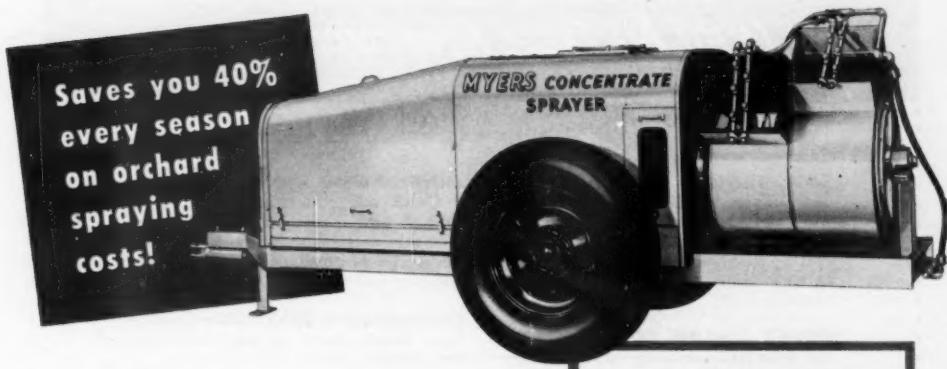
Low-cost 2-plow "VAO" tractor, Latch-On Implements
 Larger 2-plow "SO" Disk harrows
 Fast 3-plow "DO" Springtooth
 Big 4-5 plow "LA" harrows

NAME _____

POSTOFFICE _____

RFD _____ STATE _____

Presenting the NEW MYERS Concentrate Silveraire Sprayer



OPERATED BY ONE MAN . . . this newest Myers Sprayer covers more acreage per day than two ordinary dilute sprayers, each worked by a three-man crew.

This means big savings to you. Savings of over 85% on man-hours — over 60% on tractor operating time and fuel costs! It also means a job done double-quick — just at the time conditions are right.

You profit too by real savings on materials costs and handling. The new Myers Concentrate Sprayer makes every pound of material go 25% farther — every gallon of water give 5 to 10 times greater coverage.

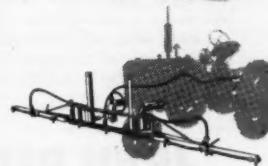
Extensive field tests prove that Myers Concentrate Sprayer equals — or betters — results obtained with any dilute sprayer. Oscillating head action assures thorough coverage of foliage and fruit. It performs effectively under high wind conditions. Either conventional spray materials or the new concentrates can be used successfully in this latest, greatest Myers Fruit Sprayer.

Myers Power Sprayers have always been unmatched for durability, dependability and easy operation — and this new Concentrate Silveraire Sprayer is Myers quality at its best. See your Myers dealer for full information, or mail coupon TODAY.

Estimated Comparative Spray Costs — Concentrate versus Dilute (40-acre mature apple orchard)

	Dilute	Concentrate	Savings by concentrate method
Labor	96 man-days \$ 576.00	12 man-days \$ 72.00	\$ 504.00
Tractor	32 days 256.00	12 days 96.00	160.00
Materials	192,000 gallons at 1.25 per 100 gal. 2,400.00	1/2 of \$2,400.00 1,200.00	600.00
Water	at 30¢ per 100... 57.60	19,200 gallons at 30¢ per 1000 5.76	.04
Totals	\$3,289.60	\$1,973.76	\$1,315.84

Over 100 Models of Myers Sprayers



2-wheel — 4-wheel — skid-types
capacities to 50 gpm. — pressures to 800 lbs.



THE F. E. MYERS & BRO. CO.
Dept. T-115, Ashland, Ohio

Send free literature on items checked below

<input type="checkbox"/> Power Sprayers	<input type="checkbox"/> Water Systems
<input type="checkbox"/> Hand Sprayers	<input type="checkbox"/> Water Softeners
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<input type="checkbox"/> Hay Unloading Tools	

Name _____

Town _____ State _____

County _____ R.F.D. _____

CHOOSE A JOHN DEERE "AO" ORCHARD TRACTOR AND ENJOY ALL THESE ADVANTAGES

LOW, SHIELDED DESIGN saves fruit and foliage, permits working close to trees and under low-hanging limbs . . . ventilated cowl deflects branches, affords real operator protection when working in tight spots, yet provides a full view ahead.

HUSKY 3-PLOW POWER gives you the extra pull necessary for those heavy-duty orchard jobs. Exclusive John Deere two-cylinder design, which distributes engine and transmission weight closer to the rear drive wheels, provides greater traction in loose, sandy soils.

ROCK-BOTTOM ECONOMY that cuts costs, increases profits. The efficient cyclonic-fuel-intake engine, available in either the all-fuel or gasoline type, is a fuel miser. Exclusive two-cylinder design means fewer, stronger, heavier working parts for longer life and lower maintenance costs.

SIX-SPEED TRANSMISSION provides the right speed for every job from operating power-driven equipment at 1.3 mph. with full power shaft output to transporting at 11 mph. Transmission is operated by a single conveniently-located lever.

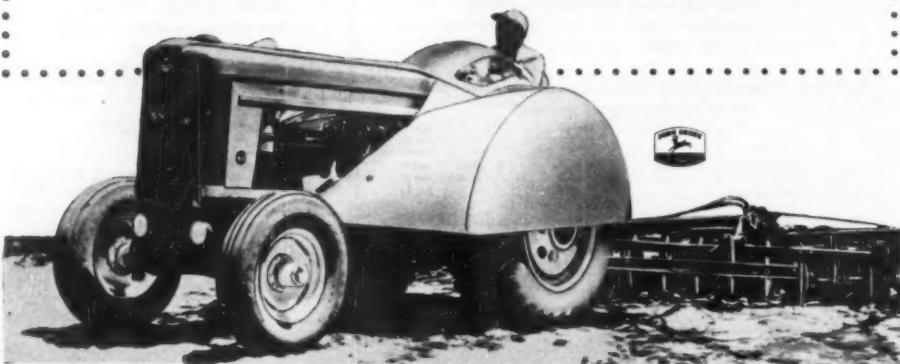
OUTSTANDING MANEUVERABILITY

—Quick-acting individual rear wheel brakes and responsive, shock-proof steering mean shorter turns at row ends . . . easier handling in cramped quarters and tight orchards.

EXTRA-VALUE FEATURES—Convenient hand clutch permits operating the tractor from seat, platform, or ground . . . battery-distributor ignition insures fast starts and smooth operation. Advanced engineering and quality construction throughout are yours in the John Deere "AO." Starting and lighting equipment, belt pulley, power shaft, rugged, adjustable drawbar, muffler and spark arrester are all regular equipment. Hydraulic Powr-Trol, for effortless operation of heavy-drawn equipment, can be furnished.

Complete, detailed information about this outstanding orchard and grove tractor will be sent on your request. Just drop a card to John Deere, Moline, Illinois. Or, the next time you're in town, see your John Deere dealer. He has the complete story about the "AO" and will gladly arrange a demonstration to prove its greater adaptability to your particular conditions.

JOHN DEERE • Moline, Illinois





Be Ready with Black Leaf 40®

Aphids hatch as buds develop. Serious damage may result from aphids that escape "egg sprays." It's important to have Black Leaf 40 on hand so that you are ready at the first sign of aphids.

Black Leaf 40 provides fast, efficient protection against aphids, leafhoppers, apple redbug, most thrips, four-lined leaf bug, pear psylla, codling moth, bud-moth, pear midge, leaf-miners, mealy bugs, pecan phylloxera, pecan nut casebearer, and similar insects. Black Leaf 40 kills these pests two ways—by contact and by fumes—quickly and economically, and insects controlled by this method do not develop resistant strains.

Black Leaf 40 does not destroy beneficial insects such as lady bird beetles and their larvae, aphid lion, syrphid fly, chalcid wasp, orius bug, epyris wasp, braconid wasp, various egg parasites, and numerous other friendly insects that attack your insect enemies. Black Leaf 40 also spares bees—the pollinizers.

Black Leaf 40 is non-caustic and does not injure foliage or fruit. It leaves no objectionable residue... necessitates no washing of fruits. Black Leaf 40 is compatible with all standard spray materials, ideally suited for use in combination sprays.

Other members of the Black Leaf family: Black Leaf 155—the "fixed" nicotine insecticide; Black Leaf DDT—50% wettable; Black Leaf Parathion 15% wettable or 25% wettable; Black Leaf Vapo-Fume—Tetraethyl Pyrophosphate.

Tobacco By-Products & Chemical Corporation • Richmond, Virginia

The "LEAF" that protects the tree
is a
"Black Leaf" SPRAY

GROW BETTER FRUIT AT LESS COST!

with John BEAN AUTOMATIC SPRAYING



The John Bean Low-Boy provides the flexibility to meet any spraying need. You can spray either left or right with the Low-Boy, or spray both sides at the same time — all with one-man operation by the tractor driver.



PROVEN AGAIN!

JOHN BEAN AUTOMATIC SPRAYING
PROTECTS THE CROP AND THE
PROFITS AT APPLE CREST FARMS.

The Low-Boy with extension is used on the large trees of Apple Crest Orchards, spraying one side only. In peaches Mr. Burnham (left) cuts off the low two guns of the Low-Boy.

Apple Crest Farms near Northville, Michigan has 165 acres of orchard including apples, pears, peaches and a few cherries. Here is what Manager John Burnham says about his John Bean sprayer and Low-Boy:

"One man and the Low-Boy now does the work of several men, and does it with less effort and fatigue. We are also getting better coverage underneath the leaves with resulting better control of red mites, leaf roller and other insects."

You conserve labor, materials and time when you switch to John Bean automatic spraying with the Low-Boy. It's simple, trouble-free mechanism also keeps maintenance time and expense at a minimum. Get all the data, send coupon, or write today.



John BEAN
DEPARTMENT AF-1
LANSING 4, MICHIGAN

Please send free literature on John Bean Automatic Spraying to:

NAME _____

ADDRESS _____

CITY _____

STATE _____

JANUARY 1951
VOL. 71 No. 1

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THIS MONTH'S COVER

The water color painting on this month's cover, by Taber Hofmann, represents the many and varied fruits grown in the United States and sets the theme for this, our second annual Yearbook issue.

The figures and charts in this issue were taken from reports compiled by the Census Bureau and the U. S. Department of Agriculture, unless otherwise noted.

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WE ARE MOVING

We are happy to announce that AMERICAN FRUIT GROWER will move its editorial, advertising, and circulation offices to a new and larger location at 106 Euclid Ave., Willoughby, Ohio. Beginning January 15, 1951, please address all correspondence to our new address:

AMERICAN FRUIT GROWER
106 Euclid Avenue
Willoughby, Ohio

AMERICAN FRUIT GROWER

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CHANGE OF ADDRESS

Please notify us as you change your address, giving us the old address as well as your new one.

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PRINTED IN U.S.A.

AMERICAN FRUIT GROWER

*THIS IS MY Third ONE...
MY Fourth WILL ALSO BE
BUILT BY CATERPILLAR!*

...Rudolph Ludwig, Milford, Pennsylvania

► Never late for a spraying date, is the assurance that this D2's all-soil, all-weather traction gives its owner. Handling the double-duty load of the power take-off spraying (with 20 g.p.m. pump) is play for the D2—on less than 1½ gallons of non-premium fuel per hour.

Then on cultivation, the positive traction means ample pulling power for heavy sod disking. Easy, responsive steering with the load—your low-effort pull on a convenient lever lets engine power do the actual work of turning. Low and compact, the D2 lets you maneuver around ends and work next to

low-crowned trees set in close rows (like Mr. Ludwig's young peach orchard).

For such reasons, Rudolph Ludwig, Milford, Pennsylvania, plans on keeping his fruit-growing career hitched to a "Caterpillar" track-type Tractor.

"This is my third one, and the fourth will be built by 'Caterpillar,'" states Mr. Ludwig. "I would have no other."

A "Caterpillar" Diesel Tractor gives you the heavy-duty power to do the toughest orchard jobs with day-saving ease and speed—and the operating thrift to do even the lightest task with profit. And "Caterpillar" Diesel Tractors that have done what equals 25 tractor years of work in the average orchard are still going strong!

That combination of virtues means plenty to the fruit-growers with perennial success in mind!

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS



CATERPILLAR

REG. U. S. PAT. OFF.

Diesel Farm Tractors

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

CATERPILLAR TRACTOR CO.

Dept. AF1, Peoria, Illinois

Gentlemen:

I operate _____ acres of orchard. Please send me your new booklet on Orchards, Groves and Vineyards.

Name _____

R. F. D. _____

City _____ State _____

LETTERS TO THE EDITOR



Here's What... M-E ROTARY TILLAGE Will do for YOU

Fills many special fruit growing needs: renovating strawberry beds . . . cultivating raspberries . . . removing sucker growth. Works close around trees—accurate depth control prevents root damage. Spray and sickle bar attachments. Does off tillage and cultivating work faster, easier, better. Unbreakable tines.

for Your SOIL

Soil without humus is non-productive! M-E ROTARY TILLAGE rebuilds soil and humus Nature's way . . . incorporating organic matter into the soil in the ONLY way that will give you constant soil balance and maximum release of minerals and other "plant food" elements.

for Your CROPS

With M-E ROTARY TILLAGE your crops will be healthier, richer in vitamins . . . better in size, flavor, and general quality . . . and your entire yield will be considerably increased!

BENEFIT THESE 3 WAYS WITH M-E!



FIVE MODELS

FREE BOOKLET

Write for free booklet that gives full details, shows pictures of what Rotary Tillage will do for you. Write Dept. AF-1 today!



Macadamia Nuts

Gentlemen:

I am nuts over nuts and I enjoy planting seeds to grow trees that will be tested for flavor, productivity, easy cracking qualities, size, etc.

Take the Macadamia nut—this nut requires a sledge hammer to crack it, but a soft and delicious kernel is found inside. Specimens that have thin shells and large kernels are sought. Many thousands of these nuts are being planted in Hawaii by the University of Hawaii and the Department of Agriculture. It will take some years before the general farmer can secure named trees.

In the meantime, I am informed by authorities that the Macadamias do very well in the soil of south Florida. The tree was discovered by Professor MacAdam and, I believe, by the same MacAdam whose name is attached to the macadamized roads. This nut was discovered in Queensland, the hottest part of Australia, and I understand that there are lowland and highland types.

Miami, Fla. George H. Corsan

The Macadamia nut is all that our Florida reader claims for it. Here is "a nut with a future." —Ed.

Marketing Red Cherries

Dear Sir:

In your editorial observation on page 30 of the November issue, "Time to Join Hands," I get the impression you recommend the formation of marketing groups in order to assure growers of a better return for their products. There are doubtless some growers whose experiences involving such efforts disprove the notion that joining hands, under an appointed marketing agent, will guarantee maximum returns. The potential dangers of the program might also be pointed out.

One project, designed to accomplish the above-quoted objective, not only failed to improve the price of the fruit involved but, perhaps through inept management, cost the supporting growers many many dollars in lost fruit.

I do not pretend to know much about the National Red Cherry Institute, but it has been my impression that the organization is primarily concerned with finding new markets for canned and frozen red tart pitted cherries and has little, if anything, to do with prices growers receive for the fresh fruit.

Cleveland, Ohio H.M.H.

H.M.H.'s warning is well taken. "Joining hands" does not of itself insure much. But it is a step in the right direction. The National Red Cherry Institute has been primarily interested in new markets for cherries, as H.M.H. says.

But now that hands are joined, the movement grows. One of it something is very likely to come that will affect the prices which growers receive for the fresh fruit. Cherry growers are doing some active work along these lines right now.—Ed.

I Like the Country Life

Dear Editor:

There was a time when I used to think I would be happier if I had married a man with a large income—a city executive. But that is no longer true.

I have a married sister whose husband is a city executive and I really do not envy them one bit, living in the city as they do

and at their confused pace. As far as I can see and hear, they struggle just as hard to meet their bills, their clothes wear out, and their doctor bills are more than ours. Their income is greater, but the demands on it are much larger in proportion.

Our family home in the country is just as up-to-date as theirs and it has the charm of a country home that is lived in while theirs is only a stopping place between social engagements.

My sister doesn't see how I ever stand the work at canning and fruit packing time; but I am equally concerned about the life she leads—it would kill me within one year.

We wives and mothers on the farm, or in small communities, have the pleasure and conviction that the things we do are constructive and fundamental, while a great many of those in the cities are like "the wind that bloweth where it listeth." It is very true that country women work hard—it is hard to find one who has much time for doing as she "listeth."

Hampton, N. J. Mrs. Anna Shoemaker

Worth Publicizing

Sirs:

In the November issue of your magazine I found an excerpt from a letter you had received in your Letters to the Editor column. I like Mr. Downing's statement of beliefs and would like to copy it for use in my S. S. teaching.

I do not find any sign of copyright but would not want to use it without your permission.

Linton, Ind. Jonathan Lowe

Mr. Downing's creed that the landowner has no moral right to take more from the soil than he returns is worthy of the widest possible distribution. We are happy that Reader Lowe will use this in his teaching.—Ed.

About the Fruit Yearbook

Dear Sir:

Allow me to congratulate you on the January, 1950 issue of AMERICAN FRUIT GROWER. I think it represents a very good summary of the fruit industry by crops, and I feel that there is much in this issue that will be of value for several years to pomology students. This is just the sort of an overall picture that I like to leave with students after their first course in pomology. New Brunswick, N. J. L. F. Hough

Gentlemen:

Your Fruit Yearbook issue for January most certainly fills the gap between the fruit grower and his market, sincerely needed for many years. The subjects covered are all timely and of prime importance to every fruit grower who expects to stay in the fruit growing business.

Penrose, Colo. Chas. E. White

Dear Editor:

Even a Canadian reader would find the January issue of AMERICAN FRUIT GROWER very informative. The reports on the various fruits, exports and imports, and, also, production are worth studying. They are very comprehensive.

Burgersville, Ont. Ivor H. Harrhy

Here is our second annual Fruit Yearbook issue which includes new features and which is even more comprehensive than our first edition. We hope our readers will like it.—Ed.

PARATHION

THE ONE INSECTICIDE FOR MANY PESTS

Protects Fruits and Vegetables, Field Crops and Ornamentals from

APHIOS (many species)

ARMYWORMS

BLACK SCALE

BLISTER BEETLE

BUD MOTH

CABBAGEWORM

CALIFORNIA RED SCALE

CANKERWORM

CAT-FACING INSECTS

CELERYWORMS

CHERRY FRUITWORM

CITRICOLA SCALE

CODLING MOTH

COLORADO POTATO BEETLE

CORN BORER

COTTONY CUSHION SCALE

COTTONY PEACH SCALE

CUCUMBER BEETLE

DIAMONDBACK MOTH

FIG SCALE

FLEA BEETLE

FLORIDA RED SCALE

FORBES SCALE

GRASSHOPPERS

GREENBUG

GREEN JUNE BEETLE GRUBS

LEAF FOLDER

LEAFHOPPERS

LEAF MINER

LEAF ROLLERS

LEAF TIERS

MAGGOT

MEALYBUGS

MEALY PLUM LOUSE

MELONWORM

MEXICAN BEAN BEETLE

MIDGE

MITES (many species)

OLEANDER SCALE

ORIENTAL FRUIT MOTH

PARLATORIA SCALE

PEACH TREE BORER

PEAR PSYLLA

PICKLEWORM

PLUME MOTH

PLUM CURCULIO

PURPLE SCALE

RED BUG

RED SPIDER

SAN JOSE SCALE

SCURFY SCALE

SERPENTINE LEAF MINER

SNOW SCALE

SUCKFLY

THIRPS

TORTRIX

VELVETBEAN CATERPILLAR

WEBWORM

WHITEFLIES

YELLOW SCALE

Available from National
Manufacturers in
Wettable Powders
Dilute Dusts
Emulsifiable Liquids
See Your Supplier

DOSAGES FOR THE CONTROL OF
ALL THESE PESTS HAVE BEEN ACCEPTED FOR
LABELING BY THE U. S. DEPARTMENT OF AGRICULTURE

AMERICAN Cyanamid COMPANY

Manufacturers of *Thiophos* Parathion Technical
Agricultural Chemicals Division
30 Rockefeller Plaza, New York 20, N. Y.

WRITE FOR PARATHION GROWERS HANDBOOK

Ship apples from coast to coast without danger of breakage!



Dent-O-Pak by The Denton Co., Oakland, Calif.
Zip-Lok bag by Milprint Inc., Milwaukee, Wis.
Snap-Sack by Shellmar Products Corp., Mt. Vernon, O.

Now—a stronger, tougher

PLIOFILM

—for better packing, more profitable selling!

HERE's the strongest, fully transparent supermarket bag yet developed—one with many important advantages for packers and shippers, wholesalers and retailers.

It's the new, tougher HP Pliofilm, so strong it can hold large quantities of apples, grapefruit and other bulky products without danger of breakage—a fact proved by field tests. It handles smoothly in bagging machinery; heat-seals easily. Blocking is completely eliminated.

And this new bag has all the other advantages that have made this rugged film a standout sales-maker. It protects contents against drying

or shriveling, keeps them farm-fresh. Produce packed in Pliofilm sells faster wholesale, commands higher price retail.

Best of all, Pliofilm packaging builds brand acceptance, insures reorders—because retailers and consumers can see the uniform size and quality under your label.

In short, the new extra-rugged HP Pliofilm supermarket bag is the best method yet of packing and shipping fresh fruit—it's faster, safer, more profitable. Available in most sizes, plain or printed, with tie, elastic or self-sealing tops. Order from your jobber or converter or write:

Goodyear, Pliofilm Dept., Akron 16, Ohio.

Good things are better in

Pliofilm

3-way protection against air, moisture, liquids



Pliofilm, a rubber hydrochloride—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

THESE CHANGING TIMES

INTRODUCTION TO THE 2nd FRUIT YEARBOOK

By LIBERTY HYDE BAILEY

IT IS two generations or more ago that I became a professor of horticulture. There had been such professorships before that time, but a young aspirant naturally was convinced that his prospects were superior.

I well remember the ardors that impelled me. My impulses centered on the effort to train better men by means of horticultural subjects and to enthuse into them the warmth and emotion that come from discoveries.

Those were burning and fateful years. It is now more than a generation ago that I absolved myself from that glowing enterprise, and my influence in respect to fruit growing has vanished. Yet for my own satisfaction I read the literature, so far as I am able to understand it, and try to keep in sight of the progress.

Much of this progress violates the pomological concepts with which I was reared, but it is nevertheless fascinating. I am particularly attracted by the accounts of new varieties, and the care with which their origins are recognized and recorded. This is the direct result of the teachings of Darwin nearly a century ago, although Darwinian explanations are no longer acceptable.

The search for high color in fruits is a modern development, and we no longer hold Swaar, Rhode Island

Greening, Talman Sweet, and various of the Pippins as prime indicators. When many years ago I wanted to graft apple trees to Swaar, I had to find my scions in my father's orchards, one of which had twice taken the prize as the best orchard of its class in the state.

An apple of unusual size for its variety was looked on with suspicion as naturally lacking in quality. The exception was Tompkins County King, even though the trees were so sprawling that they should be planted 50 feet apart. For more than 60 years I have lived in Tompkins County, and every year I buy this variety from the orchards of Herbert King, albeit he votes just over the line in Seneca County.

Perhaps those were halcyon days for fruit growers, although we began to spray for codling moth and the boy was on his knees every year digging out borers. The main stress was on varieties. My father's orchards (now in building lots) had more than 300 varieties of apples and generous inventories of other fruits. Now we desire uniformity, good looks, high color, gadgets, and attractive pack.

I am in full sympathy with the standards of the present day, but I remember the ancient epoch when we grew fruit for satisfaction.



L.H.Bailey



Quality Crop

In general, the year 1950 was an unusually favorable one for apple production. The national crop was about 10 per cent above the 10-year average (1939-1948) in quantity and much above average in quality.

Climatically, the year was one of extremes. During January and February the apple districts of the Pacific Northwest states experienced record low temperatures. During the same months eastern apple districts generally were experiencing unseasonably warm weather.

PRODUCTION - Millions bushels			
1937	153	1944	
1938	106	1945	67
1939	139	1946	119
1940	139	1947	113
1941	132	1948	88
1942	127	1949	133
1943	87	1950*	120

Spring frosts occurred in some areas, particularly in the midwestern states, but were not sufficiently widespread or severe to reduce national production. In some areas a heavy June drop occurred, but the total effect of this was favorable as it left a well-distributed crop and reduced the necessity for hand thinning.

As a result of late blooming, due to cool weather, and the cool growing season, harvest was also later than normal in all important districts. Fortunately, there were no injurious fall freezes and the crop was harvested with little loss. Also, as a result of these conditions, the fruit

*Preliminary.

APPLES

went into storage with a minimum of ripening during the harvest and packing operations and should be of optimum quality throughout the winter marketing season.

Minimum Pest Damage

Throughout the eastern states the scale problem was not unusually difficult, and other diseases did not cause unusual loss in any important districts.

With the general adoption of DDT and parathion for insect control, losses from codling moth in commercial orchards were negligible. In practically all parts of the United States the mite problem has now become the No. 1 pest control problem in orchards.

Mite infestation in 1950, while widespread, probably caused less damage than in the preceding year. This may have been due in part to the generally cool growing season which prevailed in all apple areas. It was also undoubtedly due in part to the better materials available for control and better understanding of the problem on the part of growers. A similar situation exists with the leaf roller.

It can be said, therefore, that as a result of the favorable season and the effective work of growers, extension specialists, and others concerned with disease and insect control, the crop produced in 1950 was perhaps the cleanest from the standpoint of disease and insect damage that has been grown in any recent time.

Heavy Production in New England

From the production standpoint the crop was heavy in the six New England states, where McIntosh is the predominant variety. The crop there equalled 1949 production and was almost 50 per cent above the 10-year average.

In New York state the crop was approximately 20 per cent above the average but well below the 1949 production. In Pennsylvania and New Jersey and south to North Carolina production was about 10 per cent above average and well above the relatively short crop of 1949.

The crop in Washington was greater than that of 1949. The important western states taken together,

however, produced a crop a little below the 1949 crop but 10 per cent above the 10-year average.

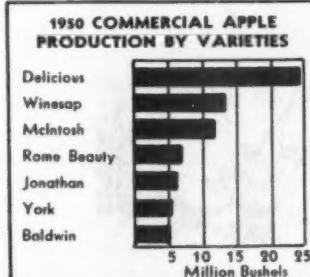
Midwest Crop Below Average

Only in the central states was production in 1950 below the 10-year average. Michigan, the leading state in that area, had an average crop but all other states were short. The area as a whole had less than two-thirds of the crop of 1949. This area largely accounts for the national decrease in 1950 as compared with 1949.

Most orchards did not over produce in 1950 and carried good foliage throughout the season. They appear to be in condition to produce an average or above-average crop in 1951 if weather conditions during that year are favorable.

Spraying Progress

During 1950 progress in the development of equipment and in methods of applying insecticides and fungicides in concentrated form continued. It now appears that most



U. S. PACK CANNED APPLES AND SAUCE



fungicides can be handled in concentrations up to about four to five times the dilute spray strength. Progress is being made in solving the mechanical problems of agitation and of pumps to handle the concentrates.

New spray materials are continually being developed and tested. Promising insecticides for mite control received extensive orchard tests during the year. Interest in ground spraying to destroy overwintering scab in fallen leaves and thus reduce spring infection sources is increasing. Organic mercurial sprays for scab control prior to bloom and at petal fall were used by a number of growers with good results.

Moderate Planting

Planting of new orchards appears to be on a very moderate basis, mainly for the replacement of old-tree acreage. Apple planting is not in excess of that needed to maintain present production. New plantings are largely of the color strains of established varieties.—John R. Magness.

The Marketing Season

Marketing of the 1950 apple crop, due to the extremely late season, has been off beat. The harvest period adjustments during which the market finds itself had not been passed by the

PRICES RETAIL—Average Per Pound			
	1939	1945	1948
1939.....	4.9	1945.....	12.6
1940.....	5.2	1946.....	13.4
1941.....	5.4	1947.....	12.8
1942.....	6.9	1948.....	11.9
1943.....	10.8	1949.....	12.6
1944.....	11.2	1950**	12.4

**10-month average, Jan.-Oct., '50.

Bureau of Labor Statistics

CANNING

Season	Average Price Per Ton Received by Grower	1947	1948	1949*
New York.....	51.60	57.40	57.00	
Potomac Valley.....	65.20	43.90	36.10	
Pacific Northwest.....	24.20	20.60	22.40	

CIDER & VINEGAR

New York.....	13.40	21.80	10.20
Pennsylvania.....	18.80	16.70	10.40
Virginia.....	15.00	12.50	10.80
West Virginia.....	14.60	12.50	10.80
California.....	11.30	17.90	13.80

DRYING

California.....	11.70	18.80	14.60
Washington.....	11.30	15.70	7.80
New York.....	17.80	24.40	15.40
West Virginia.....	35.40	**	14.60

**Quantity negligible.

FREEZING

Virginia.....	73.40	50.00	47.60
Washington.....	15.20	17.00	13.00
California.....	22.90	37.50	23.30

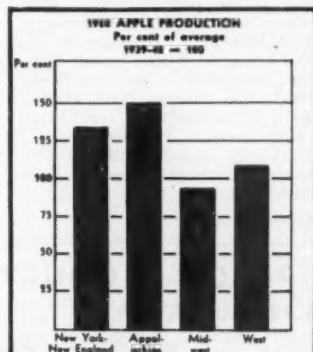
FRESH

Season	Average Price Per Bushel Received by Grower	1943	1944	1945
1934.....	.88	2.19	2.19	2.19
1935.....	.72	2.21	2.21	2.21
1936.....	1.04	3.01	3.01	3.01
1937.....	.64	2.46	2.46	2.46
1938.....	.82	1.79	1.79	1.79
1939.....	.64	1.79	1.79	1.79
1940.....	.50	2.23	2.23	2.23
1941.....	.96	1.38	1.38	1.38
1942.....	1.37	1.85	1.85	1.85

first week in November, as is usually the case.

Strong Apple Products Market

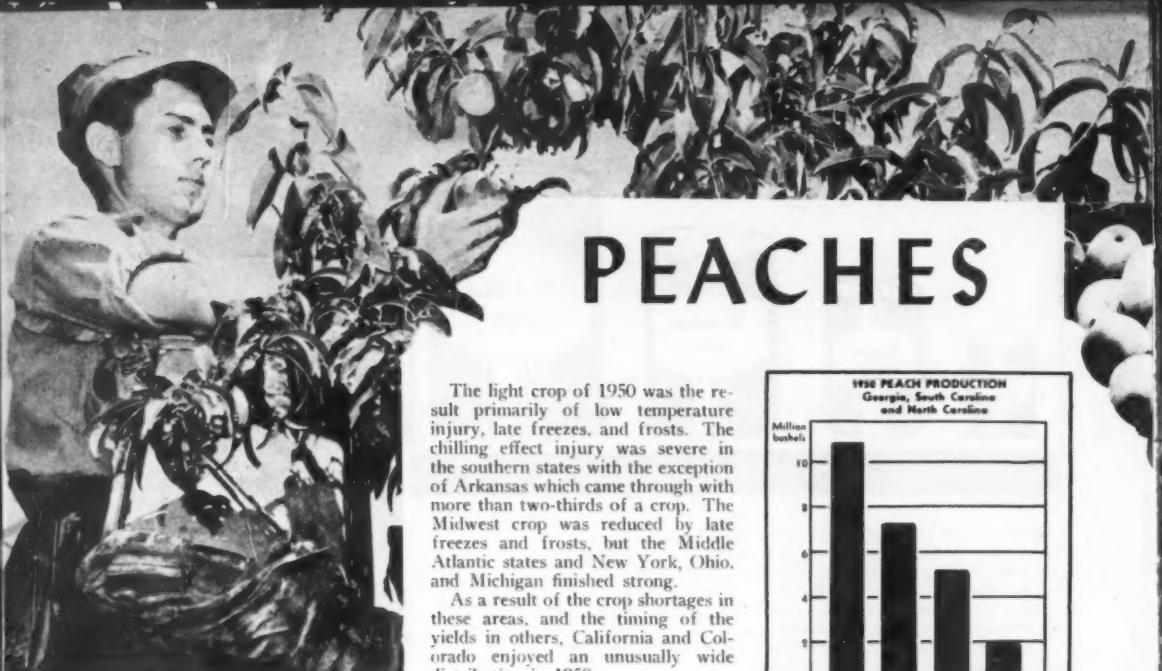
The outstanding favorable factor in the 1950 marketing picture has been the strength of the processing market. At the beginning of the season there was very little carry-over of most



FRESH—By State

Season	Average Price Per Bushel Received by Grower	1949	1950*	1949	1950*
Maine.....	2.05	2.05	Kans.....	1.90	2.60
N.H.....	1.82	1.89	Dela.....	1.45	2.10
Vt.....	1.85	1.95	Conn.....	1.50	1.90
Mass.....	1.80	2.00	Va.....	1.18	1.40
R.I.....	1.85	2.05	W.Va.....	2.00	1.40
Conn.....	1.95	2.20	N.C.....	2.00	1.65
N.Y.....	1.15	1.50	Ky.....	1.75	2.05
N.J.....	1.60	2.10	Tenn.....	2.10	2.10
P.R.....	1.00	1.50	Ala.....	1.55	1.55
Ohio.....	1.25	1.95	Mont.....	1.50	2.10
Ind.....	1.45	2.25	Idaho.....	1.00	1.80
Ill.....	1.35	2.35	Colo.....	1.60	2.45
Mich.....	1.05	1.70	N.M.....	1.80	2.40
Wis.....	1.35	2.00	Utah.....	1.55	2.60
Miss.....	1.30	2.35	Wash.....	1.73	2.20
Iowa.....	1.80	2.25	Ore.....	1.70	2.20
Mo.....	1.55	2.30	Calif.....	.81	1.55
Nebr.....	1.90	2.15			

apple products in processor hands and in distribution pipelines; trade demand for the new pack was good and
(Continued on page 64)



PEACHES

The light crop of 1950 was the result primarily of low temperature injury, late freezes, and frosts. The chilling effect injury was severe in the southern states with the exception of Arkansas which came through with more than two-thirds of a crop. The Midwest crop was reduced by late freezes and frosts, but the Middle Atlantic states and New York, Ohio, and Michigan finished strong.

As a result of the crop shortages in these areas, and the timing of the yields in others, California and Colorado enjoyed an unusually wide distribution in 1950.

Below Average Crop

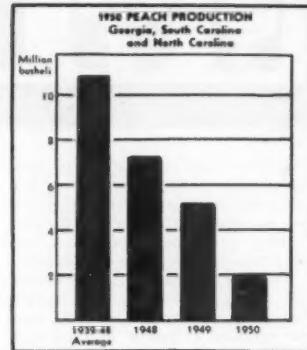
The 1950 peach crop was short in many of the important commercial areas. The total yield for the season as of October 1, according to the USDA, was 52,407,000 bushels. The July 20 estimate of the commercial crop by the National Peach Council was 47,765,000 bushels. The 10-year USDA average, 1939-1948, is approximately 70 million bushels, including the clingstone crop of California.

*Preliminary.

An Industry Problem

The great fluctuation in the total yield in peaches presents the industry with a difficult problem. The package manufacturers, the transportation agencies (both railroads and trucks), and distributors are all vitally interested. The total peach yield from 1937 to 1950 was as follows:

PRODUCTION	Million Bushels	
1937	60	1944
1938	54	1945
1939	64	1946
1940	59	1947
1941	75	1948
1942	67	1949
1943	43	1950*



How three years of frost have reduced peach production in the southern states.

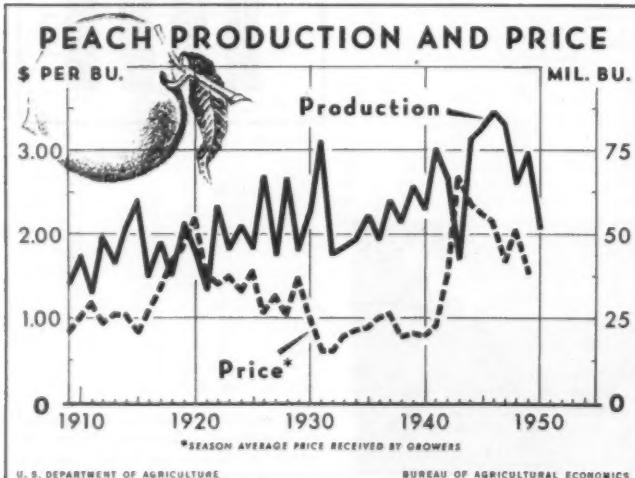
While the potential yield from the present plantings is greater than in 1937, nevertheless the fluctuations in the national crop from year to year tend to obscure a potential upward trend in production. The loss of trees in the South and in the Northwest will lower the potential yield until new plantings bring up the loss in acreage.

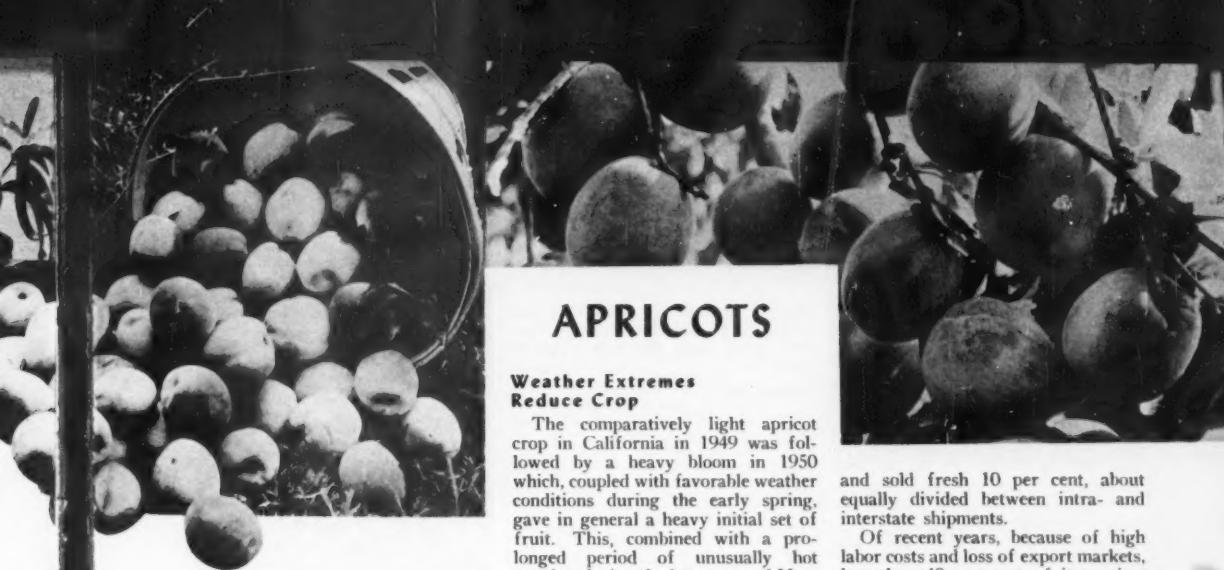
New Methods Cut Costs

New sprays and spray machinery and the mechanization of such operations as pruning, handling brush, irrigation, and disking, have gone far toward cutting peach production costs. New studies of packing shed arrangement and operations have brought to light inefficient arrangements and "bottlenecks" in the flow of the fruit through the assembly line.

A more general use of loading devices, carriers, low-wheeled orchard trucks, and better light and ventilation in the shed are generally seen in the better equipped and more efficiently managed orchards. Lift trucks and pallets can be used to supplement shed equipment in many operations.

Studies need to be made of bulk or "poured" loads movement by trucks from a number of standpoints. Newer methods of bracing carload shipments of lugs, boxes, or baskets are also reducing the loss in long distance rail shipments. Tests of top iced truck-





APRICOTS

Weather Extremes Reduce Crop

The comparatively light apricot crop in California in 1949 was followed by a heavy bloom in 1950 which, coupled with favorable weather conditions during the early spring, gave in general a heavy initial set of fruit. This, combined with a prolonged period of unusually hot weather during the latter part of May, resulted in smaller sizes than usual at harvesttime and generally lowered quality. The crop finally harvested was considerably less than originally estimated.

The 1949-50 winter was one of the coldest ever experienced by the apricot districts in the state of Washington. As a result of fruit-bud killing, the 1950 crop was negligible. The same statement holds with equal force for the apricot orchards of Utah.

loads of peaches are of general interest to the trade.

Price Review

The price level for peaches in most sections of the country was satisfactory to the producer. In some areas, however, the returns were disappointing.

PRICES

On-Tree-Return-to-Grower

	1949	1950*		1949	1950
Colorado	.93	2.10			
Georgia	2.24	3.05			
Pennsylvania	.50	.90			

	Season Average Price Per Bushel Received by Grower	1949	1950*		
Colorado	3.00	3.60	Ga.	2.95	3.90
Mass.	3.00	3.60	Fla.	2.10	2.50
R. I.	2.90	3.60	Ky.	2.10	3.00
Conn.	2.85	3.70	Tenn.	2.45	3.10
N. Y.	1.50	2.20	Ala.	2.10	3.45
N. J.	1.60	2.50	Miss.	2.00	3.45
Pa.	1.60	2.15	A. & M.	2.05	2.80
Ohio	2.00	2.60	Ia.	2.80	3.20
Ind.	1.85	2.55	Oklahoma	1.75	2.25
Ill.	1.45	2.30	Tex.	2.00	2.90
Mich.	1.20	1.85	Idaho	1.10	4.00
Mo.	2.20	2.60	Colo.	1.70	2.70
Kans.	1.75	2.45	N. Mex.	2.30	3.75
Del.	1.70	2.50	Utah	1.50	3.85
Md.	1.80	2.50	Wash.	.79	4.15
Va.	1.80	3.05	Ore.	1.40	3.70
W. Va.	1.75	2.10	Calif.	1.10	1.75
N. C.	2.00	3.10	Cling	.97	.46
S. C.	3.00	3.75	Free	1.36	2.23

Weekly Wholesale Prices in New York City

Week ending (1950)	Southern Varieties (Bushel)	Eastern Varieties (Half-Bushel)
June 10	3.51	
17	4.15	3.51
July 1	3.15	
8	3.59	
15	3.55	3.79
22	5.80	3.38
29	6.02	3.18
Aug. 5	5.15	2.60
12	3.90	2.10
19	4.60	2.60
26	4.50	3.20
Sept. 9	3.25	2.72
16		3.22
23		3.68
30		3.30
Oct. 7		2.65
14		2.50
21		1.94

The production from some of the newer varieties, which have been planted rather extensively in both the (Continued on page 70)

and sold fresh 10 per cent, about equally divided between intra- and interstate shipments.

Of recent years, because of high labor costs and loss of export markets, less than 40 per cent of its apricot crop has been dried. At the same time, there has been a tendency to increase the tonnage canned; but the fruit available for this outlet has been greater than the demand.

The frozen outlet has been disappointing. There seems to be little opportunity to increase the amount frozen until the quality of the product is greatly improved. This will probably mean new varieties especially adapted to freezing.

PRICES

FRESH—By State

Season Average Price Per Ton Received by Grower

	1948	1949	1950*
California	68.20	76.20	95.00
Utah	82.40	44.00	160.00
Washington	55.00	46.60	158.00

CANNED—By State

	1947	1948	1949*
California	73.00	57.00	52.00
Utah	65.00	12.00	33.00
Washington	69.00	43.00	31.00

Decline in Acreage

Before World War II, California exported 50 per cent of its dried and 14 per cent of its canned apricots to foreign countries, chiefly Great Britain, France, and Germany. Today these markets are practically closed to American growers.

As a consequence of high production costs and comparatively low prices for fresh fruit and dried and canning stock, 30,000 acres of bearing apricot trees in California have been removed during the past 15 years, 20,000 acres of this decrease occurring during the past four years.

Climate and the size of the previous year's crop are the most important factors determining yield. Adoption of improved cultural methods in California has not resulted in an increased yield per acre as with many other fruit crops. An average state production of three tons per acre has not changed over the past 25 years.—Warren P. Tufts.

CHERRIES

Red Tart Cherries

The red tart cherry is unique among deciduous tree fruits. It is essentially a one-variety crop; it is grown commercially in only 11 states; the five states of Michigan, Wisconsin, New York, Pennsylvania, and Ohio produce 85 per cent of the total commercial crop; approximately 85 per cent of the crop is processed, and the processed products are well adapted to sales promotion activities.

The accompanying graph shows the trends in total production and in the utilization of the crops for the preceding 20 years. Since production data for sweet and red tart cherries were not separated in government reports prior to 1938, production for the latter is estimated for the years 1931 to 1937, inclusive, the estimates being based on available information on quantities of cherries canned and frozen.

Production Steadily Increasing

Red tart cherry production has increased at an average rate of approximately 3,000 tons per year during the past 20 years. The average annual production for the past five years was approximately 122,000 tons.

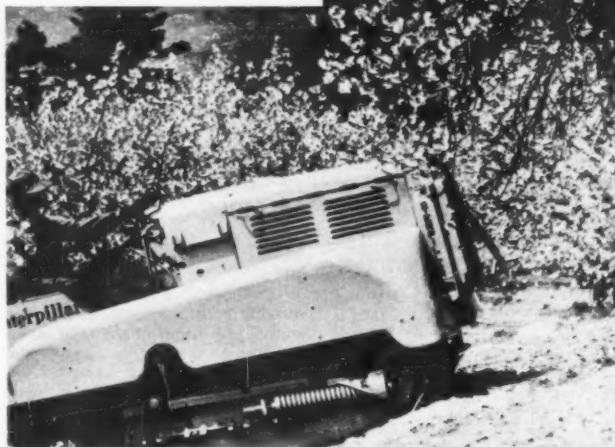
Assuming one partial crop failure during the next five years, the annual production for the years 1951-1955 may be expected to average 125,000 to 130,000 tons. As many as 165,000 tons in some one of the next five years

may be produced, inasmuch as new plantings of red cherries have been very great since the end of World War II.

PRODUCTION

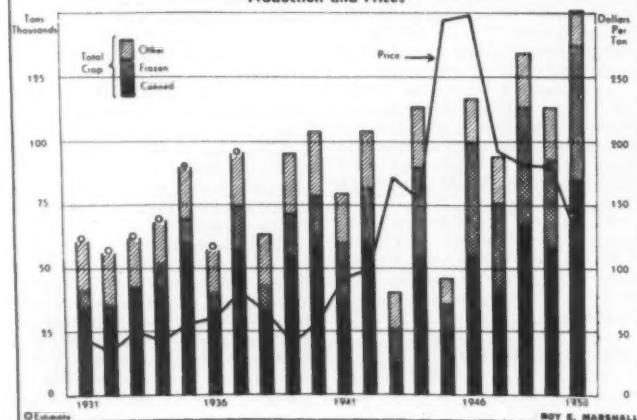
	Total	Sweet	Sour
1938	144	79	65
1939	184	88	92
1940	172	68	103
1941	162	89	81
1942	197	91	105
1943	116	75	41
1944	196	83	112
1945	149	102	47
1946	210	112	117
1947	173	79	94
1948	214	80	135
1949	230	128	102
1950*	242	82	160

(Continued on page 56)



*Preliminary.

COMMERCIAL RED TART CHERRIES Production and Prices



Sweet Cherries

Sweet cherry production in the three western states of Washington, Oregon, and California is estimated at 65,800 tons for 1950, compared with 117,200 in 1949. Most marked reduction in cherry tonnage occurred in Washington and Oregon where the 1950 crop was only about 50 per cent of the preceding year.

Reduced tonnage in the Northwest was due to the severe winters of 1949 and 1950. Temperatures of 20° below zero killed many of the fine old cherry trees in the Wenatchee and Yakima areas. Dieback, resulting from winter injuries, has been extensive in many of the younger cherry orchards in central and eastern Washington.

As a result of short supply, prices of sweet cherries were better in 1950 than in 1949. Average return to

(Continued on page 57)

PEARS

Winter Pears

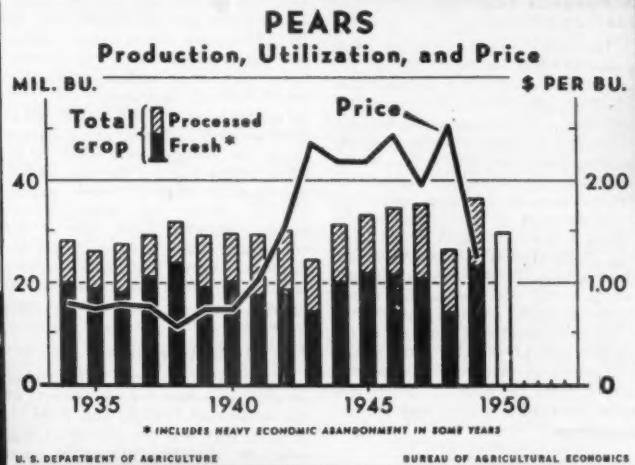
The 1950-51 winter pear crop is of good size and is finding good consumer acceptance in markets throughout the United States.

The crop is reported at about the five-year average. Using Winter Pear Control Committee figures for November 15, 1950, the total crop can now be estimated at 4,824,298 boxes, with the Anjou variety leading in production at approximately 3,565,000, Bosc at 850,000, Nellis at 223,000, and Comice at 156,000 boxes. Other miscellaneous varieties are estimated at 30,298 boxes.

PRODUCTION—All Pears—Million Bushels			
1937.....	29	1940.....	31
1938.....	32	1945.....	33
1939.....	39	1946.....	34
1940.....	30	1947.....	35
1941.....	29	1948.....	26
1942.....	30	1949.....	36
1943.....	24	1950.....	31

jobbers in proper ripening and handling methods.

Newspaper and radio advertising is carried on in markets selected for intensive promotion effort. Eight bureau fieldmen and the bureau's merchandis-



Strong consumer demand is already being shown for this season's winter pear crop. Consumption has increased steadily since the war from approximately 2 million boxes a year to the present level of approximately 5 million boxes.

Educational Program

Much of the credit for building consumer demand and successfully marketing the winter pear crop goes to the Oregon-Washington-California Pear Bureau with its education and promotion programs designed to build greater interest in the winter varieties, as well as to educate retailers and

ing director work directly in these selected markets calling on retailers and jobbers, as well as schools and institutions. An intensive education and promotion program is carried out through recipe and food picture releases by the bureau's home economics department, Pacific Kitchen.

There has been some shift toward processing as against fresh sales, but this is confined mostly to California. On the whole, winter pears are marketed fresh.

The export market has been better this year due to the export subsidy program, which takes some of the early supplies and relieves the domestic market of these supplies during the first part of the season.—R. R. McNitt.

FOREIGN PRODUCTION

	1948	1949	1950*
	Thousands Bushels		
France	15,932	25,043	35,914
Germany	2,460	14,700	16,800
Italy	9,316	14,891	14,065
Switzerland	9,259	9,700	13,117
Austria	6,614	8,157	8,200
Netherlands	3,263	6,173	5,556
Belgium	1,523	1,523	5,211
Canada	789	1,000	1,222
Other countries	24,285	20,753	5,385
Total, foreign	78,181	110,446	105,270

*Equivalent returns per bushel for bulk fruit at the first delivery point.

CITRUS

A Bonanza Year for Florida Citrus

The Florida citrus industry, after a hectic start in 1950, facing low prices and a declining demand, finished up the 1949-50 season with excellent price averages and in mid-December appeared to be heading for another good year, spurred on by the widening distribution and demand for frozen concentrated citrus juices.

At the start of 1950, growers were facing a money-losing deal, but Florida Citrus Mutual, a co-operative embracing some 6,700 growers with upwards of 85 per cent of the state's citrus tonnage, organized under the Capper-Volstead Act, stepped into the picture with price floors and sporadic allocations or prorates on shipments and stopped the decline. From that point the market started upward.

PRODUCTION

Year	Total Citrus Production in U.S., and Value, 1935-36 to 1948-49.	
	Production Thousand Boxes	Value Thousand Dollars
1935-36	78,219	118,743
1936-37	92,812	134,582
1937-38	114,252	94,581
1938-39	133,226	87,192
1939-40	123,012	105,504
1940-41	145,709	138,741
1941-42	137,294	180,190
1942-43	155,543	313,220
1943-44	173,981	402,760
1944-45	178,190	423,890
1945-46	182,450	418,559
1946-47	192,030	264,885
1947-48	180,500	200,600
1948-49	159,670	238,375
1949-50*	172,590	271,636

Profitable 1949-50 Season

While it is too early to predict the average on-tree price for citrus for the current season, growers were paid an average of \$2.16 a box (90 pounds) of oranges used in concentrates for the 1949-50 season when about 22 million gallons of orange juice alone were handled by the "squeeze and freeze" operators. Slightly lower price averages were compiled for the oranges used in single strength (whole) juice and for the fresh fruit markets.

It is estimated that the average grower has a production cost, including fertilization, cultivation, insect control, pest eradication, and occasional irrigation, of 50 to 60 cents a box on oranges. So, it can be readily

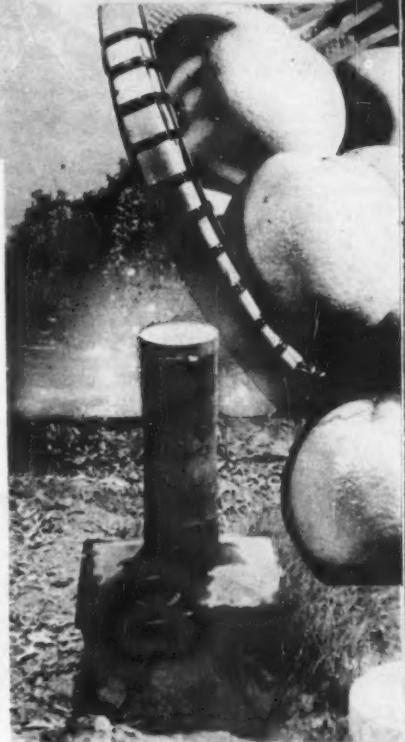
seen that the first half of 1950, which marked the last six months of the 1949-50 season, was extremely profitable for growers.

So far this season—1950-51—prices have not approached the 1949-50 average but are still in the "good profit bracket". At year's end, auction prices for oranges were about \$1.05 a box higher than for the same period last year; canners were paying \$1.67½ mostly for processing oranges, somewhat more than at the comparable time last year, and indications were that concentrators would take much more than the 20 million boxes of oranges they consumed last year.

The 1950-51 Season

Using the third week in December of 1950 as a base for comparison of the seasons of 1949-50 and 1950-51, to date, here was the picture at that time on oranges, grapefruit, and tangerines:

Florida this season had shipped 3,261 cars (500 standard boxes to a car) of oranges to the auction terminals for an average auction price of \$4.40 a box. For the same period last



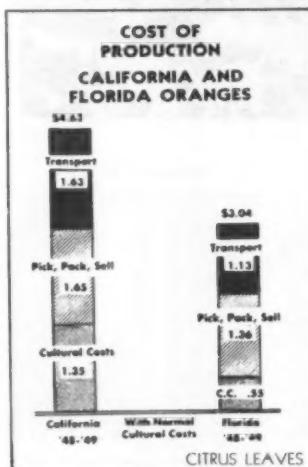
season the state had shipped 2,924 cars of oranges for an average auction price of \$3.35 a box. Total fresh orange shipments to date this season were 13,223 cars against 12,794 for the same period last year.

All records were broken during the week ending December 16 when more than 3,200 cars of oranges were shipped for the seven-day period. Including grapefruit and tangerines, a total of 5,265 cars went out of the state that week.

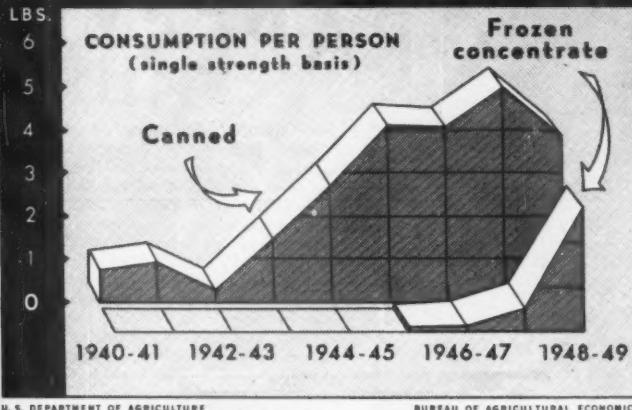
Minimum Prices Established

At the beginning of the year the government estimated a crop of 62½ million boxes of oranges, 34 million boxes of grapefruit, and about 3½ million boxes of tangerines. There were all kinds of predictions of lower prices for this season, but early in the year Mutual imposed price floors of a minimum of \$1.42½ a box on

(Continued on page 62)



ORANGE JUICE CONSUMPTION



industry's sales promotion and advertising programs.

Processors will probably use fully 50 per cent of the 1950 crop; more if fruit fails to make its usual growth. One frozen concentrate plant will be in operation this year. Further expansion will depend on consumer acceptance of pink grapefruit concentrate and blend.

Crop Outlook

Texas citrus orchards weathered the 1949 freeze better than had been expected, and there should be a 50 per cent increase in the crop for 1951 if normal conditions prevail.—W. H. Friend.

Texas Recovering from Freeze

Texas orchards had recovered sufficiently from the 1949 freeze to produce about 12 million boxes of grapefruit and 3½ million boxes of oranges in 1950. The continued confidence of investors in citrus production is shown by the rather high prices being offered for good orchards and the brisk demand for nursery stock of the Red Blush and Valencia varieties.

Scale insects, winter broods of rust mites, and melano disease caused more damage than in any recent season. Growers will be better equipped to protect their orchards in 1951. Nutritional sprays were used more than in any previous year, but relatively few trees show deficiency symptoms.

Pink Grapefruit in Demand

The price outlook is good but not equal to the 1949-50 record. Large sized red and pink-fleshed grapefruit will probably continue in the high price brackets, but the supply of such fruit is limited. The size and grade regulations promulgated by the Texas Citrus Commission early in the season have had a stabilizing effect on offerings and market prices. Wholesalers and retail dealers will be helped by the

the three sections. This figure is much less than the normal because of the freeze, which reduced the crop about 8,000 cars. The normal is about 116,124 cars a year.

The California-Arizona lemon crop this season picked out 27,000 cars. This is below normal, too, because of the freeze. The normal crop runs between 30,000 and 32,000 cars tree-crop. The estimated tree crop for this coming season is 32,500 cars.

There has been some reduction in acreage because of homesite subdividing near cities. New plantings have not been sufficient to offset that going out of production because of subdivisions and senility of trees.

Pest Control

The latest development in pest control has been the use of parathion; but the most promising entomological development is the discovery, propagation, and liberation of several species of predators which, if given half an opportunity, will bring about biological control of citrus insect pests, thus lowering this production cost factor.

Prices Disappointing

From the standpoint of marketing, prices of both oranges and lemons were not good throughout the past year. The demand for fresh lemons was curtailed largely by the cool weather in the East. Quick frozen concentrated orange juice apparently did much to reduce the demand for fresh oranges, but the overall consumption of oranges from all U. S. producing areas in all forms—fresh, concentrated, and canned single strength—seemed to be about normal.

Although the consumption of fresh oranges and single strength juice shows a decrease nationally, the consumption of quick frozen concentrate shows a tremendous increase. There is a greater volume of fruit going into processing as the demand for canned citrus products increases. Because the canned product is so convenient, indications are that the trend of citrus consumption is upward.

Exports Below Normal

Exports of citrus fruits from California have been below normal because of the lack of dollars in foreign countries. Imports of Italian lemons, while not in large quantities, have materially affected the marketing of California lemons.—Willis H. Parker.

GRAPES



Increased Crop in the East

Production of the 1950 grape crop in eastern United States was marked by two developments. The first was the large increase in the size of the crop. Considering New York, Michigan, Pennsylvania, Ohio, Arkansas, and New Jersey, the average annual grape production for the 10-year period of 1939-48 was 133,000** tons, for 1949 127,000** tons, and for 1950 over 175,000** tons.

New York and Pennsylvania had less grape production in 1949 than in 1948; the other four states had higher production in 1949 than in 1948.

The interesting part of this 1950 yield increase is that it occurred in each of the six states. There are many instances of Concord grape production at the rate of six to eight tons per acre in 1950. The production of Catawba, Fredonia, Delaware, and other varieties was also at high levels.

Part of the reason for the big crop of 1950 can be assigned to the large amount of sunshine in the 1949 growing season and to the good weather at fruit setting in 1950.

PRODUCTION

	California	Other States
	Thousand tons	tons
1936	2,114	135
1937	2,454	272
1938	2,531	140
1939	2,228	221
1940	2,250	216
1941	2,437	172
1942	2,160	216
1943	2,789	176
1944	2,514	198
1945	2,663	118
1946	2,958	202
1947	2,106	200
1948	2,857	187
1949	2,680	176
1950*	2,309	230

The second feature of the 1950 crop

*Preliminary.

**Data of N.Y. Agr. Stat. Service, Albany, N.Y.

for Concords, depending on sugar content. In November the price from cash buyers was under \$50 per ton and there was real difficulty in locating a market for uncontracted grapes.

This year's big crop points to the close relationship between grower and processor. Processors took all the grapes for which they had storage, and they made great efforts to increase their storage by use of tins, barrels, carboys, and tanks. The market for eastern grapes as fresh fruit was just not big enough to absorb much of the increased tonnage available in 1950.

PRICES—Processed Season Average Price Per Ton Received by Grower	1947	1948	1949*
	Dollars	Dollars	Dollars
New York Concords	100.00	100.00	90.00
New Jersey—All	94.00	75.00	57.00
Pennsylvania Concords	100.00	100.00	90.00
Michigan—All	81.00	59.00	64.00
Washington—All	65.30	40.70	46.00
California			
Canned	57.00	48.50	38.70
Dried	132.00	134.00	128.00
Crushed	50.00	30.00	30.00
All Fresh	50.90	52.10	39.40
Total	36.00	35.60	31.80

*Dried basis (4 tons fresh to 1 ton dried)



was the delayed maturity of the crop. Almost all of the crop was harvested in October and early November. Many grapes were delivered to the processing plants in November. This delayed maturity was evident as color, sugar, and acid content very tardily approached desired levels. The delayed maturity of the 1950 crop was due to the cloudy and cool weather of the late summer of 1950 and to the heavy crop.

Prices Vary

Prices for most of the 1950 crop will probably not be defined until the spring of 1951 because much of the crop is marketed through co-operatives. In the early part of the harvesting season Concords were selling for approximately \$100 per ton. Prices for contracted wine grapes were higher, depending on the variety. One processor paid \$100 to \$115

California Production and Prices

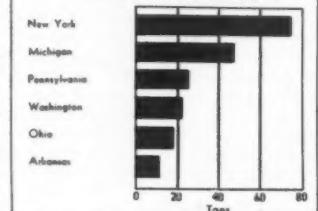
California had an estimated grape crop of 2,317,000 tons in 1950, which is within six per cent of the 1949 crop. At the start of the season it looked like a light grape crop, but the growing weather was good.

A rather unusual situation occurred in the California grape industry in 1950. In the past the three segments of the industry, namely, the raisin, wine, and table grape producers, have usually worked against each other. In 1950 they got together and made some progress towards solving their problems.

California grows some grapes that are used only for wine and some that are for table use only; but by far the biggest acreage—some 180,000 acres out of the state's total bearing acreage of 475,442 acres—is Thompson

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LEADING PRODUCING STATES IN 1950 NATIVE GRAPE VARIETIES



PLUMS and PRUNES

Plum Production

The production of plums for the fresh market, as distinguished from prunes designed for the same outlet, is limited for the most part to California, although there are some acreages in Oregon, Washington, and Idaho. In recent years a few early varieties have been developed in Texas.

The acreage devoted to plums in California has not varied to any marked extent in the last 10 years. In 1940 there were 21,960 bearing acres; in 1950, 23,810 acres.

There has, however, been a noticeable shift during the past five or six years in the area of production within the state. In the old established districts the production of early and mid-season varieties has decreased and a sharp increase has occurred in the production of early varieties in the lower San Joaquin Valley, where such varieties not only mature earlier than in northern districts but also show larger yields per acre.

PRODUCTION PLUMS

	California	Michigan
	Tons	
1943	76,000	2,500
1944	92,000	4,500
1945	71,000	1,600
1946	100,000	6,000
1947	72,000	4,000
1948	67,000	3,500
1949	90,000	6,100
1950*	78,000	4,900

PRUNES

	California	Washington	Oregon	Idaho
	Tons			
1943	490,000	23,000	104,000	7,800
1944	397,500	25,800	60,400	23,300
1945	360,000	26,100	92,100	10,000
1946	512,500	23,100	101,100	22,400
1947	500,000	23,100	34,400	37,000
1948	455,000	19,000	48,800	20,800
1949	420,000	28,600	107,000	27,100
1950*	357,500	13,600	20,700	10,500

JANUARY, 1951



Interstate Shipments

A comparison of shipments of "plums," interstate, from California and other states is shown below, but most of the movement from the Northwest is known in the trade as fresh "prunes," although there are some shipments of plums included. It all goes back to the old saying, "All prunes are plums, but all plums are not prunes." In California it is usually agreed that prunes are those varieties of plums which are generally and satisfactorily dried.

INTERSTATE SHIPMENTS OF PLUMS

	1949	1950
	Carlots	
California	4,027	4,014
Idaho	1,590	697
Oregon	1,060	180
Washington	435	456
Other states	58	12

Stabilizing the Market

The California Tree Fruit Agreement also has done much in recent years, by reason of strict control on size and grade, to stabilize the market. Size limits are placed on all varieties below which it is illegal to

ship. This keeps small, undesirable fruit off the market.

Marketing Remains Static

There has been practically no shift from fresh movement of California plums into processing or by-product channels in the past 10 years, nor is any expected. Shipping plums are not adapted to drying or processing. The entire production of California prunes, however, is dried or canned.

Fresh plum shipments continue about normal, with seasonal variations. Accordingly, the trend in plum consumption has remained about constant.

PRICES

	Season Average Price Per Ton Received by Grower
	1948 1949 1950*
PRUNES, FRESH	Dollars
Idaho	65.70 41.50 117.00
Oregon	85.40 62.30 144.00
Washington	68.80 43.50 121.00
PRUNES, DRIED	
DRY BASIS	
Washington	126.00 77.00 —
Oregon	156.00 140.00 240.00
California	152.00 164.00 245.00
PRUNES, CANNED	
Idaho	40.00 20.60 95.00
Washington	38.60 20.90 90.70
Oregon	39.20 21.00 98.50
PRUNES, FROZEN	
Washington	39.00 22.70 90.00
Oregon	38.50 20.60 98.20
PLUMS, FRESH	
Michigan	80.00 57.00 97.00
California	150.00 105.00 181.00

Good Prices in 1950

The plum season of 1950 was reasonably satisfactory from the standpoint of grower returns. This was especially true when compared to the disastrous year of 1949. The auction average on all California plums in 1950 was \$4.04 as compared with \$2.87 in 1949 and \$3.43 in 1948.

Among the leading varieties, Santa Rosas averaged at all auctions \$4.33, Beauty \$4.60, Duarte \$4.12, and President \$3.68.

Some districts suffered losses from heavy winds and exceedingly high temperatures. This was true of the lower San Joaquin Valley and on some varieties in northern areas. On the whole, however, the deal was a profitable one, caused largely by the shortage of competitive fruits, particularly southern peaches and northwestern deciduous varieties.

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NUTS



California Almonds

The 1950 almond crop in California is estimated at 36,600 tons, which is the second largest crop of record, exceeded only by the all-time bumper crop of 43,300 tons produced in 1949.

Severe frost damage was encountered in some of the heaviest producing districts, particularly in the lower and central San Joaquin Valley; otherwise, an all-time record crop would have been produced.

Production of the Jordanolo variety, a newcomer to the major varieties produced in California, was good and the reception of this variety by the trade is excellent. Nonpareil continues the most important variety and will represent 40 per cent or more of the 1950 production.

Prices for the 1950 almond crop were opened some 40 per cent above those of the 1949 crop and the demand has been good, tempered only by imports which, at times, have been available at prices below those which are being asked for domestic almonds.

The effect of the Korean War upon purchasing power has unquestionably increased the demand for almonds, particularly in the confectionery trade which is certain to feel the effect of a cost economy.—*W. Glenn Stalker*.

Western Walnuts

Present indications are that the California walnut crop will total 57,000 or 58,000 tons. Although this is a large drop from the record 80,200 tons of 1949, it will be about 90 per cent of the average for the past five years. Harvesting in Oregon and Washington was badly delayed by

*Preliminary.



unfavorable weather, so it is unwise to make even preliminary predictions at this time (December 1).

PRODUCTION by kinds—Tons

	Walnuts	Pecans	Almonds	Filberts
1936	45,800	29,894	7,600	2,100
1937	64,400	53,595	20,000	2,570
1938	55,300	37,162	15,000	2,440
1939	80,900	49,010	21,000	3,900
1940	50,800	61,442	12,000	3,210
1941	70,000	60,890	6,000	5,750
1942	61,200	38,687	23,800	4,270
1943	63,800	66,523	17,500	7,030
1944	70,900	71,610	24,000	6,520
1945	70,900	77,200	27,000	5,270
1946	71,900	38,353	37,800	8,450
1947	64,600	59,320	29,200	8,800
1948	71,100	88,834	34,000	6,440
1949	88,100	64,037	43,300	11,140
1950*	61,500	35,344	36,600	6,120

Opening prices on the 1950 crop were slightly lower than those of a year ago, the principal difference being a reduction of one cent per pound on large sizes and a reduction of one-half cent per pound in the charge for packing in the popular one-pound Cellophane bags. Prices were well received by the trade in view of considerably higher prices on all other nuts, and reports indicate that these favorable prices, plus the established preference for walnuts, are being reflected in retail sales.

The Korean fighting has had no direct effect on the walnut industry to date. It is expected, however, that the situation in Asia will probably mean a great reduction in the imports of cheap Manchurian walnuts which flooded the country last year. Indirect effects, of course, include increased purchasing power, due to greater industrial activity, and problems of supply such as are faced by all manufacturers as a result of defense needs.—*W. T. Webber*.

Filberts

Very little expansion has taken place in filbert growing in Oregon and Washington in the past two years. It was decided sometime ago that filberts were actually overplanted; and, with the low prices that have been received in recent years by growers, due at least largely to importations of foreign filberts, the filbert grower has had a hard time making ends meet.

In 1949 there was a heavy crop of filberts, but the price was so low that very little, if any, profit was made except in isolated cases. Last winter, because of extremely low temperatures, considerable winter damage occurred in filbert orchards. This damage was quite high in certain areas of Oregon and rather generally in Washington.

The USDA has estimated that the filbert crop will be around 50 per cent of the 1949 crop.

The opening price for filberts was much better than in 1949 and those growers who were fortunate enough to have a crop received reasonable compensation. Unfortunately, however, filberts were late in maturing (Continued on page 52)

BERRIES



Record Strawberry Crop

Production of strawberries, the leading small fruit, resumed its post-war upward climb in 1950 to attain the largest volume since 1942. The 1950 commercial strawberry crop of the United States, indicated on July 1, totaled about 10,347,000 crates of 24 quarts each. This was 17 per cent larger than the 1949 crop of 8,866,000 crates and more than twice the wartime low of 4,366,000 crates in 1944.

The large increase in the 1950 strawberry crop is in sharp contrast to the 14 per cent drop in total production of major deciduous tree fruits and grapes in 1950.

Although strawberries for home and local consumption are grown in garden plots and small acreages in each of the 48 states, commercial pro-

duction is important in only 28 states. Among top-producing states in 1950, Michigan expected 1,356,000 crates, and California and Oregon each expected 1,260,000 crates.

Strawberries are harvested in some state in each month of the year, but about four-fifths of the annual volume is harvested in April, May, and June.

Increase in Acreage

The rising trend in production since 1944 is largely the result of the rising trend in acreage. Acreage for harvest rose from the wartime low of 77,350 acres in 1944 to 127,430 acres in 1949 and to 137,200 acres in 1950, a gain of 77 per cent since 1944. However, the 1950 acreage was still 19 per cent below the immediate pre-war peak in 1941. According to preliminary indications, the acreage for harvest in 1951 will be about 10 per cent larger than the 1950 acreage.

The weather in 1950 was unfavorable in most of the commercial producing areas in the southern states which harvest strawberries mostly in late winter and early spring. Early spring frost and rains considerably reduced the yields per acre in those states. But the weather was favorable in most of the northern and western states which harvest mostly in late spring.

Hence, the yields per acre in these states averaged above those in 1949 and the 1939-48 average.

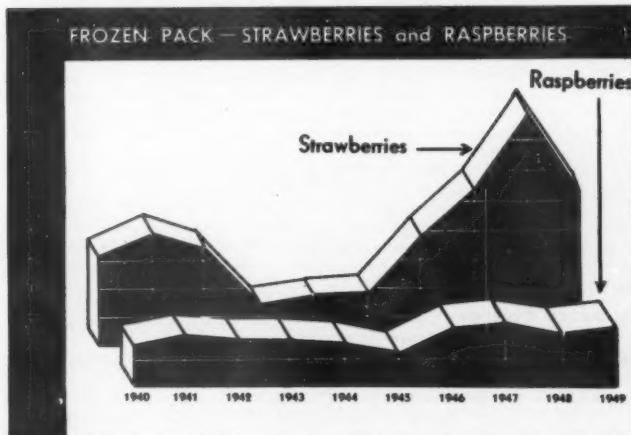
ACREAGE STRAWBERRIES		1951*
Winter	6,500	Ky. 5,500
Fla.		Vt. 1,100
		Md. 1,300
Early Spring	23,000	Dela. 1,000
La.	2,200	Calif., other 3,800
Tex.	609	
Cal., S. Dist.	1,500	Late Spring
		N. J. 3,500
		Pa. 1,800
Mid-Spring		Ohio 1,900
S. C.	500	Ind. 2,200
N. C.	1,900	N. Y. 4,100
Tenn.	8,500	Mich. 13,000
Ark.	1,000	Wisc. 3,000
Okl.	2,700	Iowa 900
Kans.	2,300	Utah 800
Mo.	5,700	Wash. 15,500
Ill.	2,600	Ore. 9,500

Value Greater Than in 1949

Demand for strawberries was strong in 1950, especially during the heavy marketing period in spring. Prices received by growers averaged higher each month during March to July, 1950, than in the corresponding months of 1949.

Grower prices for the 1950 crop are tentatively estimated to average moderately above the average of \$7.28

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SUBTROPICAL FRUITS

Avocados

California's avocado crop for 1949-50 was about the same size as that of the previous season. State-wide figures are not obtainable, but the marketing co-operative, Calavo Growers of California, sold 1,312,400 flats (17,061,000 pounds) of avocados for its members in the crop year 1949-50.

Grower returns of \$3,814,600 were 10 per cent greater, in total, for 1949-50 than for 1948-49. Most of the crop had been moved prior to June, and the remaining production was not greatly affected by Korean developments. Availability of packing supplies and their higher costs may be serious problems for avocado growers in the months ahead.

New Plantings in California

Planting of new avocado acreage continues, with latest estimates placing the California total at around 18,000 acres. Some 38 per cent of this acreage is not yet of bearing age. Removal of plantings because of residential land requirements and some tree "decline" has been more than offset by new plantings, with net gain of several hundred acres annually in recent years. This has brought about a situation where present bearing acreage is less than that of some years back, and total acreage has increased.

The long-term production trend is definitely upward. In the past four years production has been below normal and no single crop has approached the 2,378,000-flat crop marketed by Calavo in 1946. Unfavorable weather before and during the bloom period is believed the basic cause of this short-crop series. The 1950-51 crop outlook is for a reversal of the down trend, but still below normal.

Florida Supplies Heavier

Florida avocado supplies in 1950 were heavier than in recent years. Avocado production in Dade County, major producing area, was indicated to be some 12,116,000 pounds for 1949-50; the 1950-51 estimate was 13,827,000 pounds. Hurricane damage in October caused some fruit loss, with markets temporarily burdened with distress supplies. Lateness of Florida marketings will delay California avocado movement in eastern territories.

Imports From Cuba

Cuban avocado exports to the United States during June, July, and August, 1950, were some 7,486,000 pounds, compared with 4,421,000 pounds for the same period in 1949, according to the U. S. Department of

Commerce. Reciprocal trade agreements permit Cuba to export avocados duty free to the U. S. during the period from June 1 to September 30 each year.—Geo. B. Hodgkin.

Olives

The 1950 season brought into sharp focus the importance that canned ripe olives will play in the future of the California olive industry. Out of a total production of 35,000 tons, nearly 59 per cent, or around 20,400 tons, was utilized in the processing of



canned ripe olives. This tonnage brought a pack of approximately 1,400,000 cases, second largest in the history of the industry.

This swing toward canned ripe olive production can be attributed to two factors. First, foreign competition has made it impossible for the California industry to successfully compete in eastern and midwestern markets on olive oil and Spanish-cure green olives.

Secondly, because of this competitive situation, the advertising and promotional efforts of the industry have been devoted almost exclusively to canned ripe olives for the past two years.

Market Expansion Program

The Olive Advisory Board, the agency responsible for the administration of the advertising program for the industry, has been in operation through two complete crop seasons. This board, established early in 1948 through industry assent to a State Marketing Order, has brought together representative producers and processors who have assumed the responsibility of developing enlarged markets for the industry's output.

Increased Returns

The developing canned ripe olive market appears to be bringing a stabilizing influence to the grower's return for his crop. Because the industry wishes to spend its promotional money on packs of unquestioned



quality, certain smaller grade sizes in all varieties have been prohibited for canning. This has meant that the grower has been receiving an improved return on his canning sized fruit, which the industry feels has more than offset a lesser return on sub-standard sized fruit.

The 1949-50 crop season brought an average return of \$258 per ton for canning olives. The previous year the same return was \$224 per ton, showing an average of \$241 for the first two years under the Marketing Order.

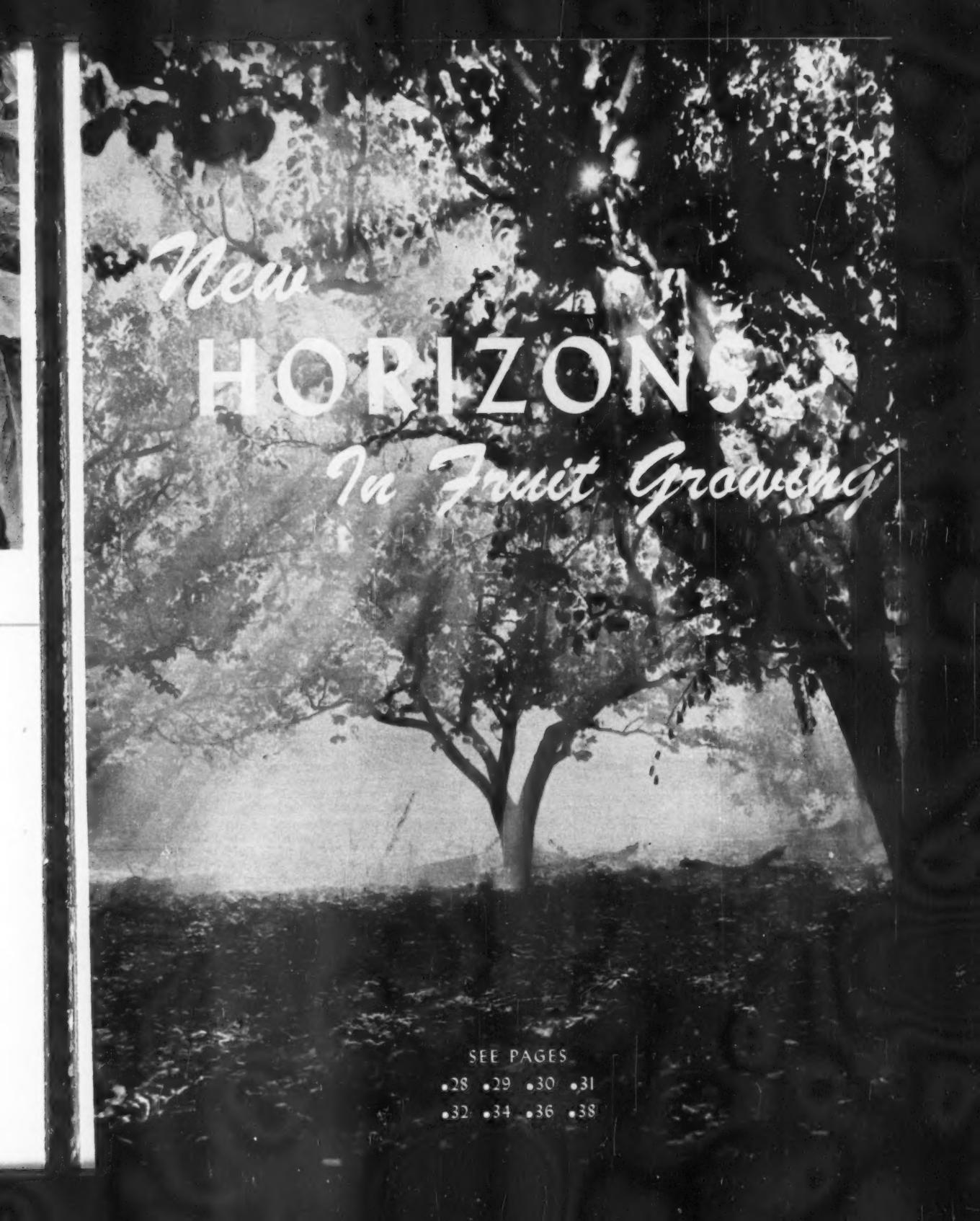
Comparing this with the \$239.60 average for the abnormal war years, and the \$82.35 per ton average for the 10-year period preceding World War II, we have some useful evidence that the California olive industry is employing intelligent means for helping itself attain that all-important condition of reasonable stability which it has so often lacked in the past.—R. W. Henderson.

Figs

Today the fig industry is operating several programs, all designed to improve the condition of the industry. All of the programs undertaken by the California fig industry are 100 per cent self-supported, with no financial assistance from any government agency.

The California Fig Institute is the parent organization and has been in existence since February, 1935. It is dedicated to better cultural and har-

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New
HORIZON^S
In Fruit Growing

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MALEIC HYDRAZIDE

A plant anesthetic which delays bloom

By D. G. WHITE, W. C. KENNARD and L. D. TUKEY
The Pennsylvania State College

ALL horticulturists are watching developments with the use of a new compound which literally anesthetizes plants for temporary periods. Fruit growers, vegetable men, florists, and landscape gardeners all have a fair-sized stake in the future of this new compound.

The compound is called maleic hydrazide (muh-lee-ick high-dra-zide) rather than by its more detailed name of 1,2-dihydropyridazine-3,6-dione, and some people have proposed that it be designated just by the initials MH.

The unique effects of maleic hydrazide were noted first in 1949 by Drs. D. L. Schoene and O. T. Hoffman of the Naugatuck Chemical Division of the United States Rubber Company in Naugatuck, Conn. These two scientists discovered that tomato plants and some grasses ceased to grow temporarily if they had been sprayed with quite low concentrations of maleic hydrazide.

The important part of this observation was not that they ceased growth, but that this cessation of growth was only temporary and the plants then resumed growth. One use of the compound suggested in this first report was its application to lawn grasses, with the resultant possibility of fewer necessary mowings.

In the spring of 1949, Naugatuck Chemical mailed samples of maleic hydrazide to plant scientists in all parts of the United States. And now, a little over a year later, reports from several investigators indicate that the economic value of this or some similar compound may be enormous. Maleic hydrazide may become a common material useful in a myriad of ways by practically every person who grows plants. There is much which must be learned, however, before you are likely to use this compound that inhibits growth temporarily.

At the Pennsylvania State College our main interest in maleic hydrazide was its possibilities as a material which might delay the blossoming of fruits 10 days to two weeks in the spring. Quite often such a reasonable delay in blossoming would avoid the serious damage of cold weather which occurs so many times during the period of full bloom.

Our goal is to develop a practical method for fruit growers to treat their plants so as to delay blossoming in the spring a reasonable period with-



Latham raspberries as they appeared on October 20 (above) on a fruiting shoot from a plant sprayed with 2000 p.p.m. of maleic hydrazide on May 8. At the left is a typical ex-fruiting shoot from a check plant on the same date showing dried-up pedicels and lack of foliage. Retention of foliage late in the fall by treatment with maleic hydrazide may prove of value.

out subsequent injury. We have been partially successful in attaining this goal with some fruits, and we are encouraged toward the others.

The most satisfactory test plants so far have been brambles, such as black and red raspberries. The treatment has been simply to spray dilute water solutions of maleic hydrazide on these plants in the spring when the leaves were expanded to about the size of your fingernail.

We do not know yet what concentrations to recommend because the treatments must be repeated a few years in order to establish a record of consistent behavior. A low concentration of 50 p.p.m. (0.005 per cent) resulted in a delay in blossoming of about one week, whereas a concentration of 2000 p.p.m. (0.2 per cent) delayed blossoming as much as a month.

Concentrations in between these two extremes have delayed blossoming in the same order of magnitude as the concentration; that is, the greater the concentration, the greater the delay in blossoming.

Certain details must be settled, however, before bramble growers can use maleic hydrazide safely. For example, the highest concentrations may cause damage to the foliage and sometimes result in misshapen fruit. In our work over two years, however, unde-

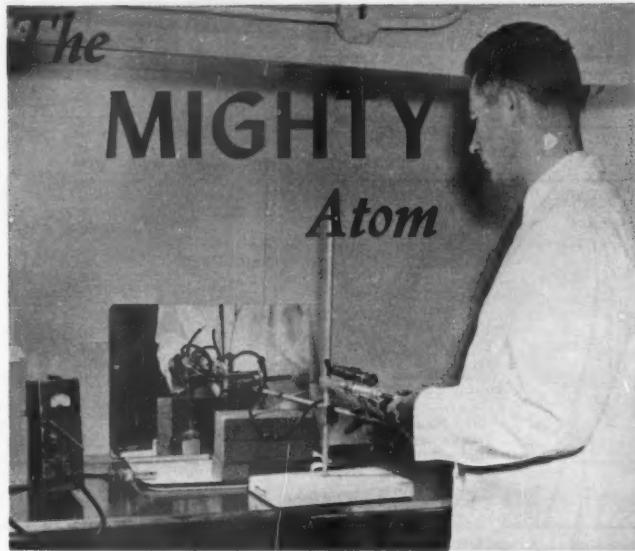
sirable effects of the first year's treatments were not evident the second year. Although injuries have not occurred with the use of low concentrations, nevertheless the threshold concentration which divides injury from no injury must be determined.

Another detail concerns the use of wetting agents which apparently increase the effectiveness and possible injury from maleic hydrazide. On the other hand, when a wetting agent is included in the solution, much lower and therefore less expensive concentrations can be employed with desirable results.

For the present, we can predict that 50 to 500 p.p.m. of maleic hydrazide plus a wetting agent will delay blossoming of raspberries for one to two weeks without apparent injury to the plants or to the fruit. There is a slight possibility that the fruit of treated plants may contain amounts of the chemical which might be toxic for humans, but we have not noticed any effects after eating treated fruits.

Some of you are going to question the importance of delaying blossoming in raspberries because they usually bloom so late naturally that frost rarely harms them. A point of more interest to bramble growers is that the berries which develop from de-

(Continued on page 44)



The MIGHTY Atom

Radioactive isotopes lead to significant findings in the field of fruit research

By ELWOOD G. FISHER
Cornell University

THE ANCIENT alchemist in his mysterious laboratory dreamed of converting base to noble metals. Advancements in the field of nuclear physics have shown us that such a conversion of one element to another does actually occur; and today scientists working with radioactive materials are taking advantage of the fact that as such a change occurs certain particles or energies are liberated which can then be measured by Geiger counters or ionization chambers. For instance, radioactive carbon slowly changes to a stable form of nitrogen, and radioactive cobalt slowly changes to stable nickel.

It is not the point here to discuss all the technical difficulties involved in the use of radioactive isotopes, but merely to illustrate that there are limitations to the use of this new tool. The farsighted policy of the Atomic Energy Commission has helped to overcome some of these difficulties. Since the end of World War II they have done much to make radioactive elements and compounds available and to train scientists in techniques and safe handling of such materials.

Two important elements from the standpoint of plant and fruit research are nitrogen and magnesium. The radioactive forms of these elements

have such short half lives, a matter of minutes or seconds, that their use in plant research is impossible. There are stable isotopes of these elements which could be traced by a mass spectrometer, but this is another new tool of plant research and will not be discussed here.

Potassium is another element important in plant research, but radioactive potassium has a half life of only about 22 hours. Its use is limited, therefore, and must be carried on close to the source of radioactive material.

Despite these limitations in the use of radioactive isotopes for plant research, considerable information is being obtained from their use and much more will undoubtedly be obtained in the near future. Radioactive materials are utilized by the plant in the same manner as non-radioactive materials. Their passage through plants can be traced by measuring the emission of particles or rays and can be detected in amounts considerably smaller than by refined micro-chemical methods.

Radioactive phosphorus was one of the first elements to be used in plant research. It continues to be a widely used radioactive material in all biological studies. A very important use is its application to fertilizer investigations. One of the first studies on

Any radioactive material which has high activity is handled behind the protection of lead bricks. A mirror behind the bricks enables the operator to observe the sample and manipulate it by remote control.

phosphorus availability came from the University of Hawaii. In the past few years the USDA has done much work studying the use of radioactive phosphorus in soils, factors affecting its availability, and the soil chemistry involved. Phosphorus studies are being undertaken in the citrus soils of California to determine what factors regulate the absorption of phosphorus and how phosphorus is related to the problem of supplying micro-nutrients to the tree.

Investigations have been carried on with grapevines to determine the effect of fertilizer placement on phosphorus uptake. Much more phosphorus was taken up by the vine as a result of deep placement than following surface application. In fact, 43 days after surface application 86 per cent of the applied radioactivity was still in the top six inches of soil, even after heavy irrigation. Radioactive phosphorus has been used to study the spread of grapevine root systems, a much less laborious way than the old method of excavation.

By means of radioactive phosphorus in fertilizers it is possible to calculate what proportion of phosphorus increase in the plant has come from the applied fertilizer. Interestingly enough, increases in phosphorus in the plant have not always been found to come directly from the applied fertilizer itself. Another study from Purdue indicated that tomato plants in nutrient solution fertilized with urea absorbed phosphorus faster than plants furnished nitrogen as nitrates.

It is possible that by the use of this new tool more information concerning viruses of fruit trees may develop. Radioactive phosphorus has been incorporated into tobacco mosaic virus and the translocation and breakdown of the virus when injected into a tobacco plant has been studied.

Since phosphorus is present in amino acids, proteins, nucleo-proteins and materials of energy transfer in plants, radioactive phosphorus will undoubtedly play a large part in both fundamental and practical research with plants.

Along with radioactive phosphorus, radioactive carbon is of extreme importance. The use of carbon dioxide with "tagged carbon" has led to considerable advancement of the funda-

(Continued on page 55)



Left—Nancy Hughes,
Queen of Virginia's
Apple Harvest Festival.

Above, left—West
Virginia's Strawberry
Queen Marjorie IX.

Above—Leah Jensen,
Payette, Idaho, Apple
Blossom Festival Queen

BLOSSOM and HARVEST QUEENS

FRUIT IS CHAMPIONED BY AMERICA'S LOVELIEST GIRLS



National Cherry Festival
Queen Joyce English.

Queen of the Arkansas Peach
Festival, Alice Ann Patterson.

Rose Ann Printup, Western
New York Apple Queen.

Connecticut's First Apple Queen, Janice Mielke.



Dewanda Hamilton, Lebanon (Ore.) Strawberry Queen.



Queen Marylyn Cunningham of Washington's Apple Blossom Festival. International News Photo.

Above, right—Shenandoah Apple Blossom Queen Anne Hedley, Stepdaughter of Vice President Barkley.

1950'S NEW FRUIT VARIETIES

By REID M. BROOKS and H. P. OLMO
University of California

THE list below, abstracted from the Register of New Fruit and Nut Varieties, includes important varieties introduced during the past year. The Register is compiled by the University of California at Davis, with the co-operation of 70 leading horticulturists in the United States and Canada, and catalogs all new varieties of fruits and nuts that have appeared since 1920. Five lists have been published in the *Proceedings of the American Society for Horticultural Science*. A supplementary list was published in this magazine in January, 1950, including varieties released commercially during 1948 and 1949.

A unique method of collecting the information is used in that postcard questionnaires are sent to the originators themselves, asking for only a limited amount of data, including the place of origin, the name of the originator, patent number or copyright, parentage of the variety, and a few descriptive notes that establish the variety as distinctive from others. At the present time there are a considerable number of new varieties being released that should be called to the attention of the public, to encourage wider testing and more rapid evaluation. Annual lists are now being published so that most varieties are reported as soon as they are named and released.

APPLE

Davey.—Originated in North Grafton, Mass., by S. Lothrop Davenport. Introduced commercially in January, 1950. Patent No. 906; December 20, 1949; assigned to Kelly Brothers Nurseries, Dansville, N.Y. Open pollinated seedling of McIntosh; discovered in 1928. Fruit: high color; distinctive flavor; hangs well on the tree; ripens after McIntosh; keeps all winter; quality and flavor equal Baldwin; most nearly resembles Wealthy in shape, but more highly colored. Tree: bears earlier and more regularly than Baldwin; resistant to scab. In 1945 awarded a first-class certificate by the Massachusetts Horticultural Society.

Delaware.—Originated in Port Washington, Ohio, by W. F. Hines. Introduced commercially in the spring of 1948 by the Henry Field Seed and Nursery Company, Shenandoah, Iowa. Delicious x Stayman Winesap. Fruit: shape, size and color of Delicious; flesh juicy and flavor of Stayman Winesap. Tree: strong grower;

spreading; foliage heavy; tendency toward annual bearing.

Delco.—Originated in Mountain Grove, Mo., by the Missouri State Fruit Experiment Station (Paul H. Shepard). Introduced commercially in 1948. Conard x Delicious; selected in 1929. Fruit: good flavor; most nearly resembles Delicious. Tree: dwarf tendency; heavy producer; suitable for home orchards.

Galbraith Baldwin.—Originated in Amherst, Mass., by the Massachusetts Agricultural Experiment Station (Floyd Galbraith). Introduced commercially in 1948. Bud mutation of Baldwin; selected in 1934. Fruit: highly colored; most nearly resembles Baldwin.

Nu-Jon.—Originated in Entiat, Wash., by A. J. Marr. Patent applied for by Columbia and Okanogan Nursery Company, Wenatchee, Wash. Introduced commercially in 1949. Parentage unknown; discovered in 1945. Fruit: large, deep red, striped; ripens 10 days earlier than Jonathan; good quality. Tree: not subject to mildew.

APRICOT

Early Bee.—Originated in McFarland, Calif., by the Del Rancho Fortuna Nursery (T. A. Sand). Introduced commercially in November, 1949. Parentage unknown; discovered in 1947. Fruit: ripens 10 days before Royal or Blenheim, which it most nearly resembles.

Franciscan.—Originated in Fresno Calif., by Marshall E. Franciscano. Introduced commercially in 1948. Patent No. 808; October 12, 1948. Parentage unknown. Fruit: similar to Royal but shaped like Tilton; flesh firm; good shipping, drying, and canning quality; ripens from the outside skin inwardly to pit; in Blenheim time, late June or first of July. Tree: large fruit buds in the dormant stage; vigorous; very tolerant to heat and cold; heavy producer.

Golden Giant.—Originated in Grand Junction, Colo., by David A. Moore. Introduced commercially in the spring of 1948. Patent applied for; to be assigned to Inter-State Nurseries, Hamburg, Iowa. Parentage unknown; discovered about 1907. Fruit: large; color attractive; quality fine. Tree: very productive, even in some areas where standard varieties are unfruitful; most nearly resembles Moorpark.

Sunshine.—Originated in Brookings, S.D., by the South Dakota State College. Introduced commercially in 1950. Open pollinated seedling of Siberian apricot; discovered in 1940. Fruit: large; good quality; most nearly resembles Manchu.

AVOCADO

Rusterholz.—Originated in Whittier, Calif., by Mrs. Katharine L. Rusterholz. Introduced commercially in May, 1950. Patent No. 969; July 25, 1950. Parentage

unknown, probably a seedling of Lyon; discovered in 1924. Fruit: size medium to large; skin purple, thin, pliant; seed medium size, tight to flesh; flesh smooth, creamy, light green, no fiber; season late November to January; most nearly resembles Lyon. Tree: upright; has some frost resistance.

BLACKBERRY

Bailey.—Originated in Geneva, N.Y., by the New York State Agricultural Experiment Station (George L. Slate). Introduced commercially during the fall of 1950. Parentage unknown, as the label was lost; selected about 1929. Fruit: large, medium firm, quality good, subacid; less trouble from imperfect berries than with many varieties. Plant: reliably productive.

Hedrick.—Originated in Geneva, N.Y., by the New York State Agricultural Experiment Station (George L. Slate). Introduced commercially in the fall of 1950. Eldorado x Brewer; cross made in 1929. Fruit: large, medium firm, pleasantly tart; most nearly resembles Eldorado but more irregular. Plant: reliably productive; less trouble from imperfect berries than many varieties.

Kayberry.—Originated in Chehalis, Wash., by Mrs. Maggie Phillips Kelly. Introduced commercially in 1948. Native blackberry (*Rubus macropetalus*) x Logan; discovered in 1940. Fruit: small seeds; soft core; good shipper and freezer; excellent for pies, jam and jelly; most nearly resembles California Mammoth. Bush: heavy producer.

Otahie (Oregon 609).—Originated in Corvallis, Ore., by the USDA (George F. Waldo) in co-operation with the Oregon Agricultural Experiment Station. Introduced commercially in January, 1950. Black Logan x Young; selected in July, 1938. Fruit: shiny black; firm; large; most nearly resembles Mammoth blackberry. Plant: productive. Adaptable to California and western Oregon conditions.

BLUEBERRY

Callaway.—Originated in Tifton, Ga., by the Georgia Coastal Plain Experiment Station and the USDA (W. T. Brightwell). Introduced commercially in December, 1949. Myers x Black Giant; selected in 1943. Fruit: large; flavor high. Plant productive.

Coastal.—Originated in Tifton, Ga., by the Georgia Coastal Plain Experiment Station and the USDA (W. T. Brightwell). Introduced commercially in December, 1949. Myers x Black Giant; selected in 1943. Fruit: large; color attractive. Plant: vigorous; productive.

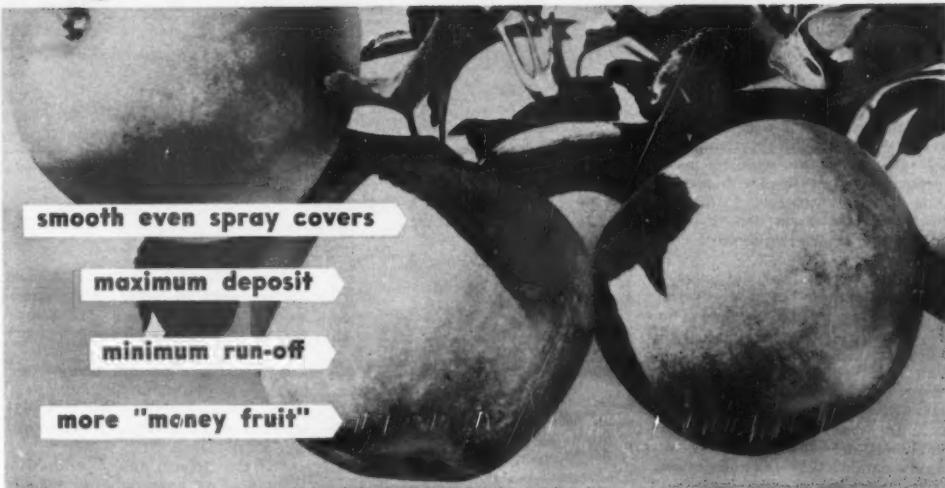
Murphy (NC 262).—Originated in Atkinson, N.C., by the North Carolina Agricultural Experiment Station and the USDA (F. V. Coville). Introduced commercially in June, 1950. Weymouth x F-6 (Stanley x Crabbe 4); planted in 1935; selected in 1940. Fruit: round to round-oblate; firm; good flavor; earlier than the fume or Stanley. Bush: low; spreading; high resistance to canker; as productive as Weymouth; excellent cluster type.

Wolcott (NC 255).—Originated in Atkinson, N.C., by the North Carolina Agricultural Experiment Station and the USDA (F. V. Coville). Introduced commercially in June, 1950. Weymouth x F-6 (Stanley x Crabbe 4); planted in 1935; selected in 1940. Fruit: generally round; firm to slightly soft but firmer than Weymouth; good flavor; as early as Weymouth. Bush: semi-upright; large; high resistance to canker; as productive as Weymouth.

(Continued on page 65)



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"FRUIT FOR HEALTH"

Cinderella in Search of Prince Charming

By DEAN HALLIDAY
American Public Health Association

THIS ARTICLE is difficult to write because the fruit industry has failed to meet the challenge of its products.

Fruit is the most glamorous of foods. It has eye appeal that would arouse the envy of the most beautiful Hollywood star. It is appetizing and does not call for an acquired taste, except, perhaps, in the case of certain exotic tropical varieties. And we know, beyond a doubt, that it is an important dietary requirement for health.

Nutritionists say that the average American family today uses only 125 pounds of fresh fruit per person in the yearly diet; whereas a nutritionally correct diet would include a minimum of 150 pounds.

Fruit is not a luxury food, say the dietitians; it is essential for good health and well being. With 36 billion pounds of fruit produced annually in the nation's orchards and groves, if fruit consumption were stepped up the way nutritionists would like it to be, an additional four billion pounds would be required.

But fruit, like the heroine of the fairy tale, is still relegated to a somewhat menial position in the market place while awaiting a Prince Charming of supersalesmanship.

Meanwhile, people buy fruit because they like it and believe it is good for them. They believe it is good for them because, over the years, nutritionists, dietitians, home economics teachers, and doctors have told them it is. The fruit industry itself has done comparatively little in an organized way to preach the gospel of fruit for health.

The one exception to this generalization is the citrus side of the fruit industry. Oranges, grapefruit, and lemons have been sold to the public in a colorful way as health foods.

Nutritionists point out that citrus fruit in some form now appears regularly on the breakfast tables in most homes, except those in the lowest economic brackets.

Referring to fruits other than citrus, Helen A. Hunscher, chairman, Home Economics Division, Western Reserve University, stated emphatically that they need more—"much more"—promotion to potential consumers.

"Surveys show that diets of people in general are still lacking in fruits.



Max Tharp

Miss Whipple's organization, like similar ones in other large cities, works with organized community groups, including Parent-Teacher Associations.

She pointed out that many other large food industries provide educational material about their products which is used constantly in nutritional education.

"At the present time," said Miss Whipple, "we have only one booklet which gives us up-to-date information on fruit for teaching purposes."

It is a 41-page booklet entitled, "Buying Guide for Fruits and Vegetables." It is attractively illustrated and contains charts of the seasons for various fresh fruits. It is published by American Fruit Growers, Inc., and when issued, a free copy was sent to teachers and professional nutritionists throughout the country.

"Our instructors use this handy booklet constantly," said Miss Whipple.

If the search for popular information on fruit for health leads you to public libraries, as it did in the case of this writer, you will find their shelves bare, or almost bare, of material on the subject. And this holds true of medical libraries as well.

There is need of a continuous educational program which will put health facts about fruit in the hands of the various national organizations which are in a position to disseminate the information to professional nutritionists and teachers, and, through them, to the public.

Among the organizations which should be supplied regularly with fruit for health facts are the American Dietetic Association, Chicago; the Nutrition Foundation, New York and Washington, D. C.; the American Home Economics Association; and

(Continued on page 51)

When Dean Halliday was editor of AMERICAN FRUIT GROWER he envisioned greatly expanded markets through the slogan "Fruit for Health." Now, as a member of the American Public Health Association, he sees more keenly the opportunities of increasing fruit sales to a nutrition-minded public. Progress in developing facts and figures about the nutritive values in fruit has been distressingly slow, but funds just haven't been available for the necessary research, much less to advertise and publicize it. Nevertheless, fruit for health booklets and sales campaigns contribute a great "new horizon" in broadening fruit markets and should be part of the planning of all growers, individually and collectively.—Ed.

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JANUARY, 1951



The USDA Western Regional Research Laboratory, Albany, Calif., where fruit processing is one of the major research projects.

WASHINGTON FRUIT OUTLOOK

By LARSTON D. FARRAR

Washington Correspondent, *American Fruit Grower*

THE YEAR 1950 was a momentous one, one in which the "cold" war warmed up into the "hot" war in Korea. The complications leading from this encounter cast the die for 1951, when the fires of international conflict likely will spread to other areas, and, perhaps, to a general war.

A year ago American fruit growers were hopeful that pre-World War II trade patterns could be re-established; that the tensions and dislocations could be eased so that mankind could work back to some degree of prosperous "normalcy."

But it was not to be. President Truman's decision to involve the nation in a "police action" in Korea, with all the momentous train of events that followed, caused a drastic shift in the domestic and the international outlook by year's end.

Now, it is evident that the nation's leaders are preparing for a general war. On every farm, in every city and hamlet, there is realization that a state of national emergency exists—and that formal expression of this fact would not be accepted so unanimously by leaders of both political parties unless the danger to freedom were real indeed.

A recapitulation of the nationally important actions in Washington that involved the fruit growing industry directly in 1950 includes:

- 1) The residue tolerance hearings of the Food and Drug Administration, which ended in early fall.
- 2) The activities of the House of Representatives Select Committee to Investigate the Use of Chemicals in Food Products, which held hearings in the latter part of the year.
- 3) The renewal of the purchase of deciduous fruits by the USDA to help stabilize the market, under Section 32 funds, which prevented what could have been a disastrous break in apple prices.
- 4) Inauguration of new research programs and continuation of former research programs by federal agencies (in conjunction with state and private groups) to help produce or market a better product.

On balance, the year 1950 was considered a "fair" year to the American fruit growing industry, in the opinion of close observers here, and it is felt that tremendous strides were made in the citrus industry. It is noteworthy that important spokesmen here—in-

cluding many in the government itself—were most impressed by the nature of progress made by fruit growers under private initiative, as opposed to federal control. The industry lived up to its long tradition of complete independence from subsidies coupled with cordial co-operation with the USDA on research and other co-operative programs.

The outcome of the residue tolerance hearings has not yet been revealed. But it is felt confidently by industry observers here that the final results will not be unduly disturbing. It is believed that tolerances will not be announced on a final basis for the 1951 crop, which is considered good news in many areas.

The fruit industry may be expected to join forces with the National Agricultural Chemicals Association and other farm groups to fight against enactment of the new legislation almost certain to be introduced in Congress by Representative James J. Delaney (D-N.Y.), chairman of the committee investigating the use of chemicals in food products. Copies of the bill (written by experts in the Food and Drug Administration) expected to be introduced by Congressman Delaney already are being circulated in the capital.

Gist of the legislation is that it would destroy, in final effect, the activities of the USDA experts who already are working closely with pesticides manufacturers; would represent a vast "grab for power" for the FDA, which is one of the principal bureaus under the Federal Security Agency (headed by Oscar Ewing, let it not be overlooked); and

(Continued on page 48)

The Big 3 OF MODERN FRUIT GROWING

RICHMORENCY

To market first, with the highest quality. This new Greening cherry combines the high quality of Montmorency and the early ripening of Early Richmond. Grown from certified budwood stock, the cherry has proven itself in Michigan commercial production.



GRAHAM APPLE

Originated in the orchards of the Monroe Orchard Fruit Company. It has all distinctive characteristics of Northern Spy, maturing earlier than Northern Spy, harvested after McIntosh. Fruit is highly colored—deep crimson.



FERTILE HALE

The outstanding Money-maker of the peach family. This new Greening introduction is a Hale-type peach which is self fertile, requires no cross pollination. The Fertile Hale ripens in September and brings 25 to 50 cents per bushel more than the Elberta. More dollars per acre with this new variety.



● Greening's trees are thoroughbreds. Over thirty years of scientific Bud Selection in developing certified nursery stock for fruit growers everywhere means greater production, prevention of deterioration, improved commercial varieties, the elimination of virus disease, and the perfection and stabilization of desirable traits. Greening Bud Selection is a Greening feature; you cannot buy it in any other fruit trees or the resulting higher production and profits.

Ornamentals, Too

Don't forget that Greening Nursery Company put the same careful selection into ornamentals. Beautify your roadside stand, packing house, cold storage and home with our ornamentals. Greening landscape architects are available to you for free consultation and a master working plan to fit your needs. Our plans show you what to plant and where. Behind every sale is the Greening reputation.

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It's pleasant and profitable to sell Greening nursery stock on a full or part-time basis. Your friends and acquaintances will welcome you. Your commission checks in many cases amounting to \$50.00 a week will help improve your own orchard and home. National advertising and the best nursery stock available anywhere make Greening trees easy to sell. Experience is not necessary.

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WORLD FRUITS

Italy Modernizes Peach Production

Italy's peach plantings reached a peak of about 70,000 acres in 1933. Production from commercial orchards in that year was in excess of 12 million bushels. Since that time, both acreage and production have shown some decline and during the war period losses up to 20 per cent of the trees were counted in the principal areas of production. At the present time, however, there is a wide interest in new plantings.

At least half of the commercial production in Italy is from American varieties, and the other half includes varieties introduced from other European countries. Breeding of peaches has received particular attention during the past 20 years. In this regard, the work of Dr. A. Morettini, director of the Institute of Tree Culture at the University of Florence, has been particularly outstanding.

The principal varieties used have been Mayflower and J. H. Hale. Two promising introductions, Morettini No. 1 and No. 2, derive from a cross of Superba (Cumberland) x Mayflower. The first of these, maturing after Mayflower, Victor, and Wheeler, but before Sneed and Amsden, has yellowish-white flesh, and separates from the seed when ripe. It makes a very vigorous plant, is a very heavy bearer, and the fruit presents a very attractive appearance on the market.

Morettini No. 2 ripens after Amsden and Alexander and ahead of Waddell and Carman. This variety is also freestone, with cream colored flesh, and is well colored at maturity. It has a much firmer flesh than No. 1, and is an outstanding shipping variety.

Ripening slightly ahead of the preceding variety is a cross of J. H. Hale and Mayflower (9-14), which is a very heavy bearer, producing a fruit of excellent appearance and quality. The flesh is creamy yellow, somewhat firm, and partially adhering to the seed at maturity. This peach also has fine shipping quality.

Pruning of the peach in the commercial areas is almost exclusively in the conventional form, as practiced in America.

(Continued on page 42)



Sorting peaches in orchard near Verona, Italy.

Writing from Italy. Dr. Guy W. Adriance, who is head, department of horticulture, Texas Agricultural Experiment Station, tells of efforts being made to revive the Italian peach growing industry. His report was made possible through a research grant under the Fulbright Act.

Eldon Robbins, advertising manager, John Bean Division of Food Machinery and Chemical Corp., tells about Danish apple growing. His observations were made when he visited Europe as a member of the Michigan State College Overseas Flying Classroom.

R. P. Longley, who tells of the transformation taking place in the Nova Scotia apple industry, is senior horticulturist at the Dominion Experimental Station, Kentville, N.S. —Ed.

Danes Use U.S. Equipment

Commercial fruit growing is one of the "coming" industries of Denmark. Although the climate of the wind-swept islands comprising Denmark is too rigorous for anything except the more hardy fruits, such as apples, considerable progress has been made in recent years in the development of commercial orchards. A shortage of modern orchard equipment, such as high pressure power sprayers, is being met through Marshall Plan funds in which the growers can purchase the equipment with Danish currency.

During the war, when Denmark was occupied by the Germans, there was no effort to increase or maintain production of fruit or other agricultural products in spite of threats and punishment from the invaders. Considerable work has been necessary to restore agricultural production to pre-war levels.

An American-manufactured high-pressure automatic sprayer was hard at work in the orchard of George Schorring at Fryden-Lund, approximately 40 miles from Copenhagen, when a delegation from the Flying

Classroom stopped in for a visit. They found owner Schorring and his orchard manager, Axel Hansen, well pleased with the performance of their recently acquired sprayer which they declared had given them better control and saved time.

The 13,000 apple trees at Fryden-Lund are on Malling stock, dwarf or semi-dwarf, and seldom grow higher than 15 feet. The varieties are Cox Orange, Gravenstein, and Belle DeBoscque, and the crop was 28,000 bushels in 1948 and 20,000 bushels in 1949.—Eldon Robbins.

Nova Scotia Apples— A War Casualty

Nova Scotia apple production is concentrated in the Annapolis Valley, which is about 80 miles long and from three to 10 miles wide. Within 25 miles of the small ocean port of Port Williams, 80 per cent of the apples are produced.

The industry was built on the practically unlimited demand for moderately priced cooking apples in the United Kingdom. The apples were produced as economically as possible. Common storage was used. The barrel predominated as a package, and transportation costs were relatively low due to the short haul to ocean ports.

The outbreak of war in 1939 and the complete embargo on apple shipments brought a crisis which would have caused the bankruptcy of many growers if the government of Canada had not given assistance. Not even history will tell if this has been a blessing or a curse to the industry.

The industry economically had several serious handicaps. The acreage of orchard per farm was very low. In 1939, of the 2,500 growers with over two acres of apple orchard, 65 per cent had under 11 acres and 80 per cent under 17 acres.

The second weakness was the large
(Continued on page 42)

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They open new frontiers in easier, faster, more profitable farming. For example . . .

POWER SHIFT Wheel Spacing adjusts rear-wheel tread instantly to match the implement and the row spacing. Combine this with CA and WD "quick-change" tools and you have "quick-change" farming.

HYDRAULIC TRACTION BOOSTER automatically increases weight on the drive wheels whenever the load calls for it. Helps you keep the work moving along at uniform speed and depth.

TWO-CLUTCH Power Control (optional on the CA) gives you an auxiliary hand clutch to stop forward travel, letting power take-off machines clear themselves.

HYDRAULIC OPERATION of mounted equipment permits uniformly deep penetration without heavy weighting or forced pressure.

If you have *average* soils, not the difficult ones, you can expect the CA to handle a *two-bottom*, close-coupled plow; the WD, a new *three-bottom* mounted plow. See them soon at your dealer's — the tractors that open new ways to profitable use of farm power.

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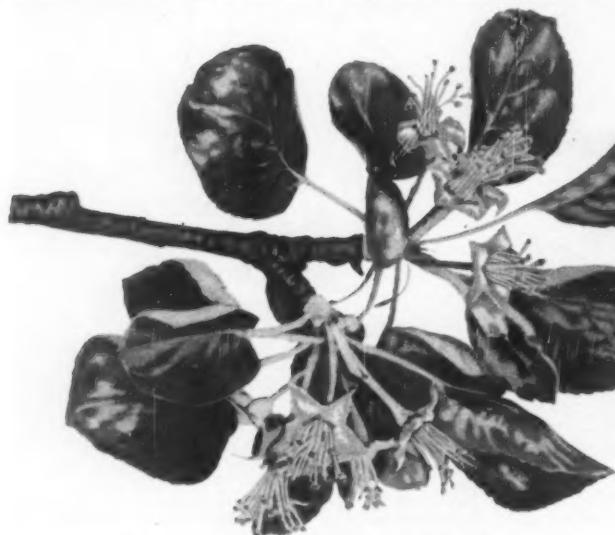
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AND GET THESE EXTRA VALUES:

- **Feed trees through the leaves.** Foliage absorbs "NuGreen" directly to build up the desired nitrogen level in the tree.
- **Get quick response.** Results show up promptly even in dry weather when roots can't absorb nitrogen from the ground.
- **Permits practical control of nitrogen supply,** for high yields of quality apples.
- **Saves labor.** Apply in pest-control sprays and do two jobs in one. Works well in both regular and semi-concentrate sprays.
- **No waste.** You feed trees exactly what they need; roots absorb the spray drip.
- **Safe for foliage and equipment.** Does not tend to burn leaves or corrode metal when used as recommended.

*Any way you use it—**NUGREEN**[®] has advantages*

CONCENTRATED 44% NITROGEN, all from urea. Fewer bags to handle, fewer loads to haul, fewer stops to refill. Saves labor any way you apply it, whether used in sprays, added to irrigation water, or spread on the ground, even with hand spreading under trees.

IDEAL FOR OTHER FRUITS AND OTHER CROPS: Top-dress tree, vineyard and bush fruits, vegetables, corn, potatoes and grassland. Dissolve in water for irrigated crops. Quick-acting, long-lasting, resists leaching even in sandy soil. Leaves no harmful residue in the ground.



This booklet gives full details on how to use "NuGreen" as spray nitrogen for apples, and for top-dressing apples and other fruits. Gives recommended "NuGreen" spray schedules for apples. Ask your dealer for your free copy, or write:

**DU PONT, POLYCHEMICALS DEPT.,
WILMINGTON, DELAWARE**



Plan your Complete Orchard Program now!

with

CORONA

ARSENATE OF LEAD
MICRONIZED 50%
WETTABLE DUST

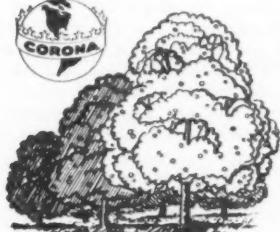
MICRONIZED WETTABLE
and DUSTING SULFURS

TREE WOUND DRESSING

COROMATE (Ferric Dimethyl
Dithiocarbamate)

COROTHION (15% Wettable
Parathion)

CORONA "26" (Tri-Basic
Copper Sulphate)



Your Insurance
for Better
Crops!



WRITE FOR LITERATURE

Corona Chemical Division
PITTSBURGH PLATE GLASS COMPANY

MILWAUKEE, WIS. MOORESTOWN, N.J.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Jan. 4-5—Maryland State Horticultural Society 53rd annual meeting, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 5-6—Western Colorado Horticultural Society annual meeting, Mesa College Auditorium, Grand Junction.—W. H. McKellar, Sec'y, P.O. Box 487, Grand Junction.

Jan. 5-6—Kentucky State Horticultural Society annual meeting, Cobb Hotel, Paducah.—W. W. Marill, Sec'y, Lexington.

Jan. 5-6—Missouri State Horticultural Society annual meeting, Columbia.—W. R. Martin, Jr., Columbia.

Jan. 9-11—Massachusetts Fruit Growers' Association annual meeting, Sheraton Hotel, Worcester.—Wm. B. Cole, Sec'y, Amherst.

Jan. 10-11—South Carolina Horticultural Society annual meeting, Spartanburg.—Roy J. Petty, Sec'y, Spartanburg.

Jan. 10-12—Indiana Horticultural Society 9th annual meeting, Murat Temple, Indianapolis.—Ray Klackle, Sec'y, West Lafayette.

Jan. 12-13—Utah State Horticultural Society annual convention, Newhouse Hotel, Salt Lake City.—Clarence D. Ashton, Sec'y, Rt. 2, Box 315, Provo.

Jan. 15-17—Virginia State Horticultural Society 55th annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

Jan. 18-19—Ontario Retail Farm Equipment Dealers' Association 6th annual show, in conjunction with annual conventions of The Ontario Retail Farmers' Association, the Ontario Fruit and Vegetable Growers, and The Ontario Crop Improvement associations, Coliseum, Toronto, Ont.—W. Kamienski, Business Mgr., 81 King St. East, Toronto 1, Ont.

Jan. 19-20—New York State Horticultural Society 94th annual meeting, Rochester.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 23-24—Maine State Pomological Society annual meeting, during Agricultural Trades Show, Jan. 23-26 (tentative).—R. N. Berry, Sec'y, Livermore Falls.

Jan. 24-26—New York State Horticultural Society 55th annual meeting, Kingston.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 25-26—Pennsylvania State Horticultural Association annual meeting, Harrisburg.—J. U. Ruef, Sec'y, State College.

Jan. 29-Feb. 3—New Jersey Farmers' Week, Trenton. Fruit meetings on Feb. 2.—Fred W. Jackson, Director, Department of Agriculture, Trenton 8.

Jan. 30-Feb. 1—New Hampshire Horticultural Society 57th annual meeting and Trade Show, George M. Putnam Hall, Univ. of New Hampshire, Durham.—D. R. Batchelder, Sec'y, Wilton.

Feb. 1—Vermont State Horticultural Society 5th annual meeting, Hotel Boise, Boise.—Anton S. Horn, Sec'y, State House, Boise.

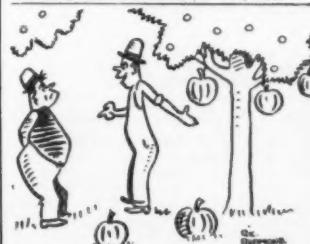
Feb. 12-15—Canadian Horticultural Council annual meeting, Chateau Laurier, Ottawa, Ont.—L. F. Burrows, Sec'y, 219 Queen St., Ottawa, Ont.

Feb. 19-21—National Peach Council annual meeting, Chase Hotel, St. Louis, Mo. Feb. 21st meeting to be in joint session with American Pomological Society.—M. J. Dorsey, Sec'y, 1502 S. Lincoln, Urbana, Ill.

Feb. 21-22—American Pomological Society annual meeting, Chase Hotel, St. Louis Mo. Feb. 21st meeting to be in joint session with National Peach Council.—W. D. Armstrong, Sec'y, Princeton, N.J.

Feb. 21-22—Ohio State Horticultural Society annual meeting, Netherlands Plaza Hotel, Cincinnati.—C. W. Ellwood, Sec'y, Wooster.

Apr. 3-5—Produce Prepackaging Association First Annual Conference and Exposition, Neil House Hotel, Columbus, Ohio.—Howard J. Ruetensik, General Chairman, Orwell, Ohio.



New formula
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—helps you get to
market earlier with
bigger and better fruit!

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FRIEND AIR-BLAST SPRAYERS . . . for "concentrate" and "semi-concentrate" spraying. Of direct centrifugal-flow design, they develop 15,000 cu. ft. of air per min. for either or both sides . . . throw a finer spray in a more uniform air pattern . . . are 15 to 20% narrower . . . save thousands of pounds in hauled weight, cutting both fuel and time costs.



FRIEND PRESSURE SPRAYERS . . . with the world-famous Friend Pump . . . the pump with fewer moving parts, instant packing adjustment, quick-clean valves that can be stripped in three seconds, score-proof cylinders and tapered roller bearings. Capacities from 3½ to 60 gals. per min. at pressures up to 800 lbs. . . . power takeoff or engine driven . . . on skid or 2- or 4-wheel trailer chassis.



FRIEND SPRAY GUNS . . . to meet every requirement. Manual or hydraulic controlled masts and booms, special guns and brooms. So efficient you'll find them in use even with other brands of equipment.

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A1

ITALY PEACHES

(Continued from page 38)

An interesting aspect of the pruning program is the bending downward of the branches on young trees the first two years in the orchard. This practice results in a restriction of vegetative growth, more branching, and earlier production of fruit. In this stage, and also later, considerable individual attention is given to shaping the trees, with the use of poles and braces to spread branches or to pull them together, as desired.

Irrigation is considered essential for satisfactory production of peaches on a commercial basis. The greater part of the commercial area is adjacent to the Po and Adige rivers and some very extensive and interesting irrigation systems have been constructed.

Pest control suffered during the war period and many orchards were destroyed by San Jose scale or infested with other insects or diseases. At the present time, the commercial areas have established a forced control for San Jose and trees are remarkably clean. Careful programs for the control of other pests are also conducted by the principal growers, who are using good equipment and producing clean fruit of excellent appearance.

Marketing of the fruit in the future will depend on the success of the producers in expanding domestic consumption, which is considerably less per capita than in America; and in re-establishing the export market in Central and Western Europe, which was lost almost completely during the war.—Guy W. Adriance.

NOVA SCOTIA APPLES

(Continued from page 38)

number of old trees. Of the 1.6 million trees, 24 per cent were over 40 years of age. With the loss of the United Kingdom markets which normally took about 80 to 90 per cent of the commercial crop, another weakness became apparent. Both the late keeping cooking varieties and the high priced dessert varieties such as Golden Russet and Cox Orange Pippin which normally were marketed in the United Kingdom were

not wanted on the Canadian and U.S.A. markets.

One-Third Trees Removed

Soon after the war started growers commenced grubbing orchards. This was due to a decreased demand for apples; an unlimited demand for practically all other farm products; and the fact that they had large numbers of trees that were old and many were of unwanted varieties. It was realized by authorities of government that if tree numbers could be reduced the basis for further assistance would also be less. A bonus of \$2 per tree was paid, with practically no limitation on the number of trees destroyed, and later the bonus was doubled. The result has been that the number of commercial trees has been reduced from 1.6 million in 1939 to 1.1 million in 1949, with a nearly normal number of young trees set.

The need for the large, red dessert and general purpose apple in place of the cooking apple of the past made it necessary to graft large numbers of trees. To encourage this the Nova Scotia government is giving some financial assistance based on work accomplished. Encouragement was given to framework in preference to the cleft grafting method, as it was realized that these trees would more quickly return to production and would produce better trees.

A total of about 50,000 trees was grafted and framework in 1948 and 1949, and it is probable that the number in 1950 exceeded the number in either of the earlier years.

The tree destruction, the grafting, and the tree replacement programs have changed the variety and tree age situation so that today the McIntosh has taken a lead in tree numbers but not yet in yield. The red strains of Delicious and Gravenstein, and the Cortland have increased to places of greater importance. The average age of trees has been materially reduced.

All concerned in Nova Scotia would welcome the opening of the United Kingdom markets. The elimination of old trees places the production on a more efficient basis, and the shift to varieties wanted on the Canadian markets and the markets of the eastern seaboard of the United States places the Nova Scotia industry in a better position for the future —R. P. Longley.

JANUARY, 1951

There's Longer Life, Greater Economy, More Power in Massey-Harris Tractors

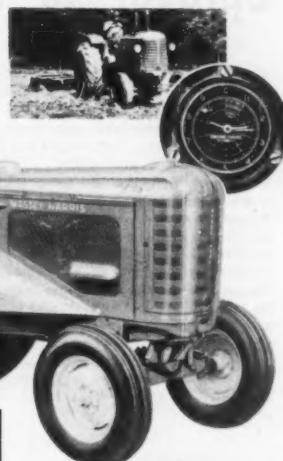
HOUR METER ON A 1944 MASSEY-HARRIS TRACTOR RECORDS 8,225 HOURS OF CONTINUOUS SERVICE — TRACTOR STILL CARRIES ORIGINAL PISTONS

In the spring of 1944, Marvin Jones of Kingston, Ohio, took delivery of a Massey-Harris Tractor. With 8,225 hours of service and three sets of tires later, this tractor is still the most used of three power units on the Jones farm. There's hardly a day, winter or summer, it isn't at work of some kind.

Of course, Mr. Jones takes good care of his equipment. He uses good oil and changes the filter elements every 100 hours. In 8,225 hours of work — the equivalent of more than 400,000 miles of driving an automobile — the only repairs have been a valve grind in 1947 and new rings at 6,200 hours. The crankshaft takes only standard size rod bearing inserts. The original carbure-

tor, governor, clutch, brakes and steering parts are still in use. Nor, has anything been done to the transmission or differential.

It is performance like this — the result of Massey-Harris choice of materials, precision manufacture, and quality control — that is causing more and more farmers to say: "Make mine a Massey-Harris." We hope that you will too — some day soon.



CHECK THE ADVANTAGES OF OWNING A MASSEY-HARRIS

MORE ECONOMY — Massey-Harris Tractors last longer . . . cost less to maintain . . . deliver more horsepower hours per gallon of fuel. Impartial tests prove this.

MORE POWER — In every power range, Massey-Harris Tractors are more powerful. This extra horsepower gives you extra performance in the field.

MORE COMFORT — In the Velvet Ride seat, convenient controls, the Depth-O-Matic 2-way hydraulic system, there is the extra comfort that helps you to cover more acres with less fatigue.

A SIZE TO FIT YOUR FARM — In the six basic power sizes and 28 different models, there's a Massey-Harris Tractor to fit your needs exactly.

Get in touch with the Massey-Harris dealer near you. He'll be glad to tell you all about Massey-Harris Tractors and arrange for a demonstration on your own farm. For free folder by mail, use the coupon below.

*Make it a
Massey-Harris*

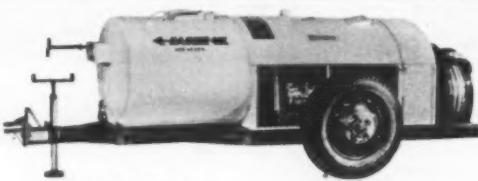
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The Hardie Air Queen.

Hardie Bio-spray.



HARDIE Builds an Air Blast Sprayer to fit every need

EVERY size and type of one-man machine required by any grower for the application of pest control chemicals by power-driven air is included in the great new comprehensive Hardie 1951 line.

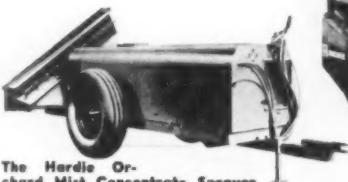
For atomized concentrate mist sprays the great, improved Hardie Orchard Mist Concentrate Sprayer, fully tested and proved, is unmatched for big acreage operations. Available in two models.

The Hardie Air Queen is a lower priced air blast sprayer that handles concentrate or dilute spray as desired. The fan case is reversible enabling the operator to direct the mist or spray on either side.

For the grower who desires to convert his high pressure sprayer to an air blast machine, the Hardie Bio-spray, a low-priced blower and engine unit, easily attached, will make it a dependable, fully efficient air-type outfit.

The new Hardie Orchard Duster is the first pest control unit of its type to provide the large volume and high velocity of air necessary to apply chemical dust to trees with precision and complete, uniform coverage.

Hardie High Pressure Sprayers in a wide variety of models and sizes, delivering from 3 gpm at 250 psi to 80 gpm at 1000 psi, specialized orchard spray booms and spray guns are also shown in the big new Hardie 1951 Catalog. Write for it. Ask your dealer.



The Hardie Orchard Mist Concentrate Sprayer.



Hardie Orchard Duster.



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HARDIE
PEST CONTROL EQUIPMENT

MALEIC HYDRAZIDE

(Continued from page 28)

layered blossoms mature later than those not treated. The main value of maleic hydrazide with brambles, therefore, is more likely to be the delay in maturation of the fruit and consequent lengthening of the harvest season.

We have found that the delay in maturation of raspberries from treated plants is not always equivalent to the delay in blossoming. For example, blossoming may be delayed two weeks while maturation of the fruit from the same flowers may be delayed only about 10 days. These differences probably occur because of environmental changes, primarily in temperatures.

An extreme example of delaying fruit blossoming and maturation was experienced this summer with Latham raspberries. Sprays of 2000 p.p.m. of maleic hydrazide delayed the first fruit maturation 56 days. The last of the Latham berries, fully developed and of good flavor, matured the latter half of October. Among seven varieties of red raspberries, there were some differences in the amount of delay in blossoming with the same concentration, but in all cases flowering and fruiting were delayed without injury.

Unlimited Possibilities

We will not say much about the effects of maleic hydrazide on many other fruits just now; experimentally, however, we have had response to sprays of maleic hydrazide on plants of apple, peach, sour cherry, sweet cherry, plum, currant, gooseberry, grape, and strawberry. Although a foolproof method for obtaining the desired effects is yet to be developed, we believe the future is rather bright.

Sometime before many years we predict that fruits, grown where cold weather often damages flowers in the spring, will be treated with some material like maleic hydrazide to delay their blossoming a reasonable period of time. In addition, small fruit growers may be apt to use it to spread out the harvest season for their own convenience and to avoid glutted markets.

By the fall of 1949 and since then many additional uses of maleic hydrazide have been advanced. Dr. J. E. Knott of the University of California found that the production of undesirable new shoots on a *Pyracantha* hedge could be prevented effectively by spraying with this compound. Such treatment eliminated the necessity of clipping the hedge so often in order

to maintain a uniform appearance.

R. R. Miller and D. Erskine of Ohio State University used maleic hydrazide sprays on ginkgo trees to prevent the set of their obnoxious fruits.

Dr. A. W. Naylor of Yale University discovered that corn plants treated with the material did not produce pollen but that the ears developed without injury. This observation may be adopted by breeders of hybrid corn to eliminate the considerable manual labor required to cut the tassels off stalks which are to be pollinated from some other stalk. He also found that maleic hydrazide inhibited the development of flowers on tobacco plants and has suggested that it might be used for the same purpose on such plants as lettuce and celery, where development of seed stalks is usually undesirable.

At the Arnold Arboretum, Dr. R. H. Fillmore lengthened the decorative period of cut roses by treating dormant shoots with maleic hydrazide—an application which may work with some other flowers. Dr. S. H. Wittwer and R. C. Sharma at Michigan State College prevented root growth and sprouting of onions in storage by pre-harvest sprays with this chemical. Sprout growth of stored carrots similarly was inhibited, and it is possible that such treatments may be effective in preventing development of undesirable sprouts on stored Irish potatoes.

Weed Control

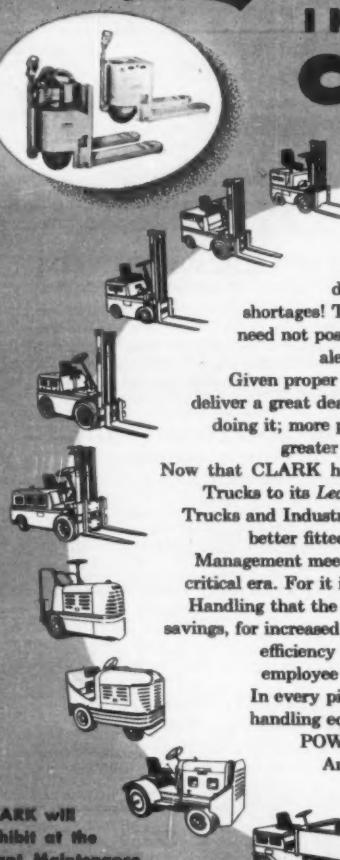
As a selective weed-killer, maleic hydrazide also seems promising when it is used at concentrations higher than we have mentioned. Young Johnson grass and various water grasses growing in cotton were killed but the cotton was not injured, according to Drs. H. B. Currier and A. S. Crafts of the University of California.

And an obnoxious pasture weed, wild onion, was controlled without permanent damage to the grasses by Drs. V. C. Harris and O. A. Leonard in Mississippi. Young crab grass was killed by concentrations which did not injure desirable grasses, according to Dr. J. W. Zukel of the Naugatuck Chemical Division.

By now we assume that you are convinced of the unusual possibilities which may be developed through research with the unique and versatile compound, maleic hydrazide. Horticulturally, this material has potential applications useful to the grower, the processor, the dealer, and the housewife.

MORE Power for Manpower

IN EVERY CLARK MACHINE



STEADILY RISING COSTS—growing user

demands—imminent labor shortages! These very real conditions need not pose frightening problems to alert and able management.

Given proper machines, manpower can deliver a great deal more power—and enjoy doing it; more power that translates into greater production & lower cost.

Now that CLARK has added Powered Hand Trucks to its *Leadership Line* of Fork Lift Trucks and Industrial Towing Tractors, it is better fitted than ever before to help

Management meet the challenges of a most critical era. For it is in the field of Materials Handling that the greatest opportunities for savings, for increased production, for improved efficiency and for the betterment of employee relations are to be found. In every piece of CLARK materials-handling equipment, there is MORE POWER FOR MANPOWER.

And it is yours—to employ—yours to enjoy.

CLARK will exhibit at the Plant Maintenance Show, Cleveland, Ohio, January 15-18, 1951.

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Your Guide to Lower Costs and Cleaner Fruit in '51

You can't go wrong if you use Stauffer Sprays or Dusts in all applications calling for sulphur. Make a note of these Stauffer products for economical, thorough protection.

MAGNETIC "70" CONCENTRATED SULPHUR PASTE

"The cream of the Sulphur Pastes"—Quick Setting—Adhesive

The finest of our fine sulphurs. Particle size: under 2 microns surface average diameter. Your best choice for use in the early season sprays on Apple, Pear, Cherry and Peach for such diseases as Scab, Blossom Blight, and Brown Rot—or wherever a mild sulphur of maximum effectiveness is needed. We suggest that you try Mag "70" in your Concentrate Sprays.

MAGNETIC "95" MICROFINE WETTABLE SULPHUR

Microfine—Quickwetting—Adhesive

Particle size: under 5 microns surface average diameter. The finest of our dry wettable sulphurs. Ideal for use in the early cover sprays on Apple, Pear, and Peach. Unexcelled for dusting during rains. Use Mag "95" whenever your spray program calls for a microfine wettable sulphur.

MAGNETIC "90" MICROFINE DUSTING SULPHUR

Microfine—Freeflowing—Adhesive

Our finest dusting sulphur. Particle size: under 5 microns surface average diameter. Specially formulated for dusting Apples during light, misty rains for the control of Scab.

"MAGNETIC SPRAY" WETTABLE SULPHUR

Effective—Economical—Safe

Particle size: under 8 microns surface average diameter. An excellent general purpose spray for use on fruit, vegetable and ornamental crops. If your summer spray program calls for Wettatable Sulphur, try "Mag Spray".

"CROWN" BRAND WETTABLE SULPHUR

Quality at Lowest Cost—98% through 325-Mesh

Particle size: under 10 microns surface average diameter. Not too fine, or too coarse, for the pre-harvest sprays on Peach, Cherry, Plum. For superior color and finish, use "Crown".

"PERFECTION" DUSTING SULPHUR

Freeflowing—Non-Alkaline

Available in two grades: (a) 98-100% and (b) 93-95% through 325-Mesh screen. For use in dust mixtures or alone on fruits, vegetables and ornamentals. The perfect pre-harvest dust for Cherry, Plum and Peach.

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CROP PROTECTION NEWS

- A study of the build-up of European red mite, by G. W. Underhill of the Virginia Agricultural Experiment Station, showed that eggs began hatching about the time apple buds showed pink, and the last eggs hatched about petal fall.

A large carryover of winter eggs led to outbreaks causing serious bronzing of the apple foliage in the early season, a moderate carryover to serious bronzing in mid-summer, and a light carryover to bronzing in late fall.

The early season outbreak was most serious from the standpoint of injury caused but was followed by mere traces of winter eggs the following season. The last type was least serious but gave a heavy carry-over of winter eggs.

Good control of the early season outbreak of mites was obtained with a single application of miticide, made at petal fall. The second cover ranked next in efficiency to the petal fall spray and the pink spray was least efficient. The results of this study indicate that the petal fall spray is a good alternative for the dormant or the delayed dormant oil treatment.

• Preliminary tests of several organic phosphate compounds as systemic insecticides yielded interesting results on citrus seedlings at the University of California. Systemic insecticides are compounds which can be readily absorbed by plant foliage and roots and subsequently translocated throughout the plant and which render the plant tissues poisonous or unpalatable to juice feeding insects. Parathion, very highly toxic by direct contact, had little or no systemic action while its close relative, para-oxon, had considerable systemic action.

OMPA—octamethyl pyro-phosphamide—is only slightly toxic to insects by direct action but is quite effective as a systemic. This lack of toxicity of direct contact is of considerable importance as it prevents destruction of beneficial parasites and predators. This factor should largely eliminate the destructive increases of resistant insects sometimes observed following the use of DDT or parathion.

OMPA applied to the soil about citrus seedlings in pots gave complete kill of citrus red mites for five months. When applied to large citrus trees by spraying at one to two

pounds per 100 gallons of water. OMPA treatment resulted in complete clean-up of natural mite populations for periods of at least three to four months, although adjacent trees were heavily infested.

Studies on systemic insecticides will require several years of experimentation and the solution of many technical problems before any practical use can be anticipated.

• The Dow Chemical Company reports that five years of testing have proven basal bark treatment of brush and small trees to be as effective as conventional foliage applications of weed killers. The discovery opens up new possibilities in year-round brush control since in most areas foliage treatment is possible during only four or five months of the year.

The basal bark method is applicable over the full 12 months and is limited only by severe rainfall, deep snow, or exceptionally low temperatures. The chemical, 2,4,5-T has proved more effective than 2,4-D for basal treatment except with a few species, such as willow, that are more susceptible to 2,4-D.

Two factors are important for best results—the mixture should be thoroughly stirred before application and the basal area should be wet to point of run-off. In spraying stumps to prevent resprouting, the bark on the sides of the stump should be wet thoroughly as well as the cut surface on top.

• Aluminum foil has been found to be an effective protector of young apple trees from mice and rabbits. J. D. Winter of the Division of Horticulture, University of Minnesota, wrapped the trunk and lower branches of newly planted trees with aluminum foil five inches wide and with a thickness of 0.0015 inch—the kind recommended for frozen food packaging. Whereas unwrapped trees were completely killed or seriously injured by rabbits and mice, the foil wrapped trees were unharmed and grew vigorously.

The foil remained on the trees for two years with no evidence of injury, although an examination revealed it might be undesirable for the foil to remain during the summer months because of mold and other fungous growth under the foil. In a commercial application 650 trees were wrapped, using a strip six inches wide and 18 inches long for each tree at a cost of one and one-half cents per tree. The foil was easy to apply, two men wrapping 650 trees in seven hours.

Match the MASK to the Hazard!



When you use Parathion or other toxic insecticides to save your crop... use the right mask to *save yourself*. These MSA masks reflect experience gained in developing all varieties of protective equipment to combat hundreds of breathing hazards.

M-S-A FARM SPRAY RESPIRATOR

Use for outdoor applications. Tested by U. S. Dept. of Agriculture. Comfortable, gas-tight seal. Chemical cartridges and filters readily replaced.

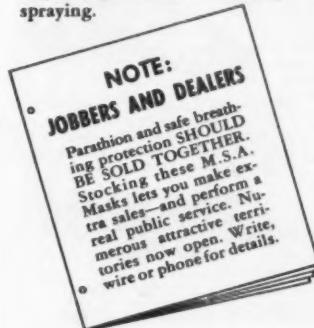


MS-A GAS-FUME RESPIRATOR

Has replaceable chemical cartridges carried on back harness, to remove air intake from working zone. Unobstructed vision—unhampered freedom for wearer.

M-S-A INDUSTRIAL GAS MASK GMC-1

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48

FRUIT OUTLOOK

(Continued from page 36)
would subject chemicals manufacturers to virtual dictatorship of inspectors for the FDA.

It has been pointed out by trained observers here that fruit growers, and others, should be alerted to the pernicious aspects of the contemplated legislation and a strong fight made to defeat it, or its most vicious provisions. The legislation could squeak through an unwary House of Representatives, but it is not very likely to get through the Senate, particularly if its ramifications are brought into the open and discussed thoroughly.

Vast Readjustments Foreseen

Generally, fruit growers are going to face some tremendous challenges in 1951—as citizens and as fruit growers. The outlook, in a word, is dark.

While watchfully waiting, the nation will begin building a four million man Army; priorities will be put into effect on virtually all metals and minerals; practically all reservists will be called to the colors before 1951 is over; price ceilings and wage controls likely are to be invoked, if they have not already been; nationwide registration, tattooing (of blood types) on each citizen; and the building of a strong civilian defense organization also will be started.

Civilian production on a wide variety of goods and services will be curtailed, although at the same time the demand for such goods and services will increase. Therefore, black markets can be expected, if price ceilings are invoked, or rising prices if such ceilings are not used. In short, the free market—supply and demand—is going to work, whether Uncle Sam likes it or not, and that means more inflation, open or concealed.

You, as a fruit grower, will have to learn how to get along with less labor (and less competent labor) as the months pass. You also are going to have to learn to make old machinery do—repair it again and again. Machinery will be in ever shorter supply, as the steel and other metals go into the maw of Mars. And the building of a huge (for peacetime) land Army will mean your sons will be drafted in increasing numbers. A new tax rise on individual income taxes is inevitable, plus a spreading of the excise taxes.

Valuable Research Programs

Research in fruit growing and marketing will aid the industry. Just a few of the programs already developing or planned for an early start are as follows:

The Texas Citrus Commission and the USDA have completed plans for

AMERICAN FRUIT GROWER

an extensive program of co-operative research on processing of Texas citrus fruits. The investigations will be conducted at the Bureau of Agricultural and Industrial Chemistry's Fruit and Vegetable Products Laboratory in Weslaco, Texas, with bureau personnel and a scientist from the Texas Citrus Commission.

Mulching with high-nitrogen hay has led to outstanding improvement in 18-year-old apple trees on poorly drained soils at the USDA's Research Center at Beltsville, Md., according to C. P. Harley, H. H. Moon, and L. O. Regeinald, plant scientists, who said that results of their experiments demonstrate that hay mulching is an effective way of applying essential nutrients to trees.

The hay-mulched trees showed a striking superiority over orchard trees that had been given wheat straw mulch with supplementary nitrogen, equal to that contained in the hay, from the first year. The experiment has been going on seven years. The straw-mulched trees, incidentally, showed more vigor than unmulched trees.

Results of the study indicate that the first year's output from high-nitrogen hay mulch provides a substantial supply of nutrients for tree growth and production when there is adequate rainfall for the mulch to decompose. Under mulches, many tree roots grow at the surface of the soil and in direct contact with the decomposing mulch, enabling the roots to get a continuous supply of nutrients at low concentration over a long period.

Grading apples in Michigan orchards with an experimental field grader reduced fruit bruising and cut grading costs from 60 to 70 per cent, horticulturists of the Michigan Agricultural Experiment Station and engineers of the Bureau of Plant Industry, Soils and Agricultural Engineering, USDA, have proved. Orchard-graded apples go directly into the containers in which they move to market or to cold storage, which eliminates several steps in the grading and packing process and reduces the bruising that normally accompanies these operations.

In these and many other experiments across the nation fruit growers are benefiting by research carried on by federal, state, and private agencies.

The year 1950 saw the introduction of a constant stream of new techniques in all phases of the fruit industry, from orchard to consumer, but if profits are to be achieved, in the face of the heavier and heavier costs to come, more widespread use of up-to-date methods must characterize the operations of more fruit growers.

JANUARY, 1951



Orchard Protection by Dusting

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SUBTROPICAL FRUITS

(Continued from page 26)

vesting practices and to improvement of the quality of all varieties of California figs.

Joint Industry Effort

The Marketing Program for Figs, a producer program, operates under the Producers Marketing Act of the State of California and sets up definite specifications under which figs may enter processing plants. Through this program approximately 25 per cent of the crop of substandard quality is set aside and diverted to non-edible channels.

The Marketing Order for Figs is a processor program, established in 1944 under the California Marketing Act of 1937, which sets forth specifications under which all dried figs are shipped out of California.

Advertising and sales promotion is sponsored and financed jointly by both producers and processors, and has received excellent support in tie-in programs with the American Dairy Association and the biscuit manufacturers making fig bars.

A month-long Fig Festival is promoted each year during February, at which time a national advertising campaign is carried out, featuring fig bars and ice cream, the cost being shared by the three industries mentioned above.

Short Crop, Higher Prices

California produces annually from 26,000 to as high as 35,000 tons of figs. Fig bearing acreages amount to approximately 33,000 acres.

During October, 1949, with the harvest season barely complete, a severe frost hit the fig growing area and caused serious damage to the trees.

Again, in the following March, another severe frost hit northern and central California just as the terminal buds were unfolding and almost completely killed the terminal buds of most varieties in many areas. However, as the season developed, lateral buds came forth which later produced fruit, although the harvesting season was set back two or three weeks. Some figs were not harvested as they failed to reach maturity.

Again in July, a month of extreme

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Working drawings showing construction details are included in all sets of plans.

Roadside Market	\$.50
10,000-Barrel Apple Cider Storage	.50
Tenant House	1.00
Polo-Type Packing House	1.00

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heat with sustained temperatures far above normal hit the fig-growing areas of California. The water supply, from both rainfall and irrigation, was far from adequate.

The 1950 harvest produced a crop of only 23,500 tons, of which 3,500 tons were diverted to the Substandard Pool for non-edible purposes. Merchantable production by variety for this past season amounted to the following approximate tonnage: Calimyrnas 5,200 tons, Adriatics 7,200 tons, Kadotas 3,100 tons, and Black Missions 4,500 tons.

Prices paid producers for figs this past season were higher than average, brought about by the short supply. Total farm value of the fig crop for 1950 should exceed \$6 million.

1951 Outlook

The outlook for the 1950-51 season appears favorable from a production standpoint. Bountiful rains have fallen in all of the fig growing areas; and, on December 1, seasonal rainfall had been far above normal.

No early frosts occurred to cause any injury to trees. Enough new plantings of figs are planned to replace the normal loss through depletion and the growth of residential areas into the fig growing districts.—*A. E. Thorpe.*

"FRUIT FOR HEALTH"

(Continued from page 34)

the Food and Nutrition Board. And not to be overlooked is the American Institute of Nutrition at the University of Illinois and the Food Research Institute at Leland Stanford University of California.

Obviously, the billion dollar fruit industry has a big job to do in telling people, especially Mrs. American Housewife, the facts of life about fruit for health. The people of the U. S. need more fruit in their diet—four billion pounds annually—which points up that the problem today is not overproduction but underconsumption.

It is a job for all fruit associations, national, state, and regional organizations. It is a challenging educational job which fruit growers cannot afford to ignore in the mistaken belief that other educators and teachers will do it for them, unaided.

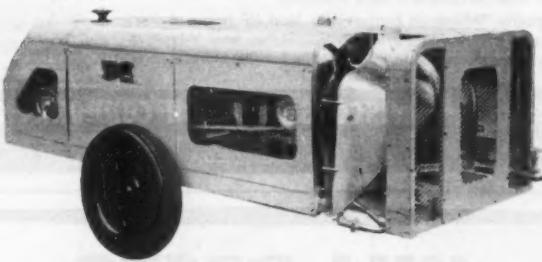
Recently writing about food for health, Dr. Leonard A. Scheele, Surgeon General, U. S. Public Health Service, pointed out that promotion of certain foods for health purposes obviously creates markets for better products from America's farms. The fruit industry must keep fruit in this picture.

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Now orchard and grove operators can get complete coverage at less cost with Concentrate Spraying . . . use lighter equipment . . . with this sensational one-man Iron Age Orchard Mist Sprayer!

Look at these Farquhar features! Double axial blowers allow efficient spraying from either side. High-speed air blast insures complete coverage. Special discharge orifices direct propor-

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You have no cooling problems with Wisconsin Engines, summer or winter. You have only ONE make of engine to become familiar with (no tricky gadgets or operating peculiarities to confuse you or cause trouble). You can get original factory parts and servicing, not only from the authorized Wisconsin Engine dealer near you, but also through the dealers representing leading manufacturers who use Wisconsin Engines as original equipment on their orchard and farm machines.

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Write for free booklet

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NUTS

(Continued from page 24)

and the month of October was one of the rainiest months in some odd 30 years, with the result that quite a large percentage of the 1950 crop will never be harvested.

This means that the total quantity of filberts put on the market this season from Oregon and Washington may fall as low as 30 to 35 per cent of last year's crop.

The various sales organizations in Oregon could have disposed of the entire filbert crop at a very good figure had they been available for the early market demand; but since this demand was not met, it is questionable what the final outcome will be although the crop is small enough that there seems to be little danger of any carryover.—John H. Painter.

Nuts in the East

In the central and eastern United States in 1950, one native nut—the pecan—is on a fairly steady basis as a commercial crop. Another nut, the Chinese chestnut, has demonstrated its ability to survive the chestnut blight and will become an important crop if it does not prove too susceptible to a second threatening fungus, the oak wilt.

The black walnut, after 50 years of named varieties, still remains without much profitable commercial acreage. Among the other nuts—shagbark hickory, Persian walnut, Japanese heartnut, butternut, and filbert—each has its enthusiasts.

Pecans

Reliable statistics are available only for pecans. The indicated 1950 crop of 110,688,000 pounds (55,344 tons)

PRICES

Season	Average Price Received by Grower	Per ton	Almonds	Walnuts	Improved Seeding	Dollars per ton	Cents per pound
1934	180	202	191	15.5	11.0		
1935	280	263	203	12.4	5.0		
1936	402	270	217	14.7	9.6		
1937	275	217	181	14.9	5.8		
1938	258	225	221	11.8	7.2		
1939	209	226	168	12.2	7.8		
1940	324	250	230	12.8	6.9		
1941	704	306	252	12.8	6.5		
1942	442	352	307	18.9	14.6		
1943	212	499	478	15.5	10.0		
1944	744	540	446	27.8	17.0		
1945	720	551	509	29.1	20.0		
1946	486	384	554	40.1	28.9		
1947	558	232	381	29.5	18.4		
1948	422	238	317	15.3	10.0		
1949*	316	220	322				

is 14 per cent less than 1949 and 37 per cent under the record 1948 crop but only 8 per cent less than the 10-year average. Quality is better than in the last two years for most areas and prices are the best since 1947.

Improved, grafted varieties, with 52,064,000 pounds, are yielding 10 per cent more than in 1949. These come mainly from the Southeast. The seedling crop, of which Texas is the

largest source, is 27 per cent below 1949 with a total of 58,624,000 pounds.

Georgia, where nearly 80 per cent of pecans are grafted varieties, is first in production this season with approximately 35,750,000 pounds—nearly twice the 1949 crop. Texas is second with 30 million pounds, a million above 1949 but well below the 57 million of 1948. Third is Oklahoma, normally a big seedling producer, but with only 7.2 million compared to a 1949 crop of 24 million pounds.

Production Going Up

The second quarter of the century has had a less rapid increase in pecan planting than the years to about 1925. But with a tree population of between 10 and 11 million since 1930, nut production has averaged somewhat higher in each five-year period. From 1936 to 1940 it was 58,123 tons; 1944-45, 61,659 tons; and 1946-50, 64,989 tons.

Georgia reports little new planting and almost no topworking during 1950. In new plantings the old standard Stuart variety is favored along with the newer Desirable. Others being planted include Curtis, Moore, Moneymaker, Farley, and Brooks.

Among the so-called northern pecans the Major still seems the most reliable in central Illinois and similar latitudes. Giles is attracting attention among newer varieties. In the hickory-peach hybrids, Pleas (a bitternut hybrid) fruits in Ohio, while Burton, considered to be half shagbark, is notable for its fruitfulness and quality a little farther south.

Chinese Chestnut

The Chinese chestnut is becoming established as a commercial crop in the peach areas of the eastern states, with orchards from Alabama to Lake Erie and southern Illinois sending more nuts to market each year. An increasing, though still small, per cent of the plantings is in the most promising newer grafted varieties such as Abundance (favored to the north and west) and the USDA introductions, Nanking, Kuling, and Meiling.

The American-grown Chinese chestnuts find a good place in the market because they can be sold before imports from Europe arrive, there is little competition from American and European chestnuts grown farther west, and other types of nuts are not competitive. European chestnut imports are due to decline in the next few years because of infection in Italy and Spain by the same chestnut blight which nearly eliminated American chestnuts.

A new threat to our infant chestnut
(Continued on page 54)



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The patented design of the AQUA-JET Boom HEAD is a common sense way to stop wasting power-sprayer pressure. The discharge from the Aqua-Jet continues at high-velocity after the twin streams impinge (or atomize) outside the nozzle. The finer particle size and the unique air-draft created gives longer reach and better spraying than any ordinary nozzle. Full hydraulic control from the tractor seat assures ONE-MAN OPERATION and lowest cost orchard spraying.

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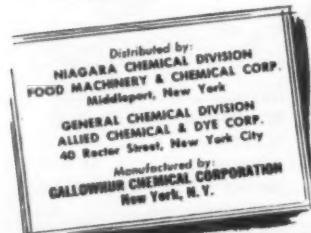
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VERSATILE

Effective, too, for brown rot blight of cherries and peaches, and certain other plant diseases.

*Trade Mark



NUTS

(Continued from page 53)

industry, however, is the oak wilt disease which was discovered infecting some Chinese chestnut trees in Missouri in 1950. There is no known control for it, it seems quickly fatal to all oak species, and it has spread widely to the east and south of the infection centers first noted in Wisconsin and Iowa just a few years ago.

Other Eastern Nuts

With a few exceptions the walnut species, native and foreign, are cultivated only in limited quantity for home use in the central and eastern states. The Thomas is still more generally planted than any or all of the other numerous black walnut varieties though others are better in the Prairie soils and northward. Some newer ones of promise in various areas include Sparrow, Beck, Snyder, Cornell, and Cresco. The bulk of black walnuts on the market still comes from wild or seedling trees.

Three hardy Persian (English) walnut varieties, Jacobs, Hansen, and McKinster, were named last year in Ohio, and other new ones should emerge among the winners in the prize contest of the Northern Nut Growers Association.—J. C. McDaniel.

EXPORTS

	1947-48	1948-49	1949-50*
	Thousands pounds		
Pecans (shelled)			
Canada	280	1,115	685
Other countries	34	33	34
Total	314	1,148	719

Walnuts (shelled)

Canada	633	366	18
Other countries	85	112	11
Total	718	478	29

Walnuts (unshelled)

Canada	1,522	468	2,570
Brazil	1,080	200	320
Cuba	507	588	706
Other countries	594	361	388
Total	3,703	1,617	3,984

IMPORTS

Almonds (shelled)			
Italy	7,858	9,218	1,392
Spain	3,643	531	1
Other countries	349	535	26
Total	11,840	10,304	1,419

Filberts (shelled)

Italy	35	130	72
Turkey	4,161	7,583	6,226
Other countries	6	59	165
Total	4,202	7,772	6,463

Walnuts (shelled)

Italy	334	1,082	661
Turkey	207	948	401
Other countries	67	536	5,248
Total	598	2,566	6,312

FOREIGN PRODUCTION

Almonds (shelled)			
Italy	1949	1950*	
Spain	24,900	20,000	
Iran	21,900	25,400	
Other countries	7,700	6,600	
Total, foreign	34,400	30,700	

Filberts (unshelled)

Italy	32,700	37,400	
Spain	16,500	27,300	
Turkey	99,000	26,700	
Total, foreign	148,290	91,600	

Walnuts (unshelled)

Italy	15,400	27,500	
France	13,100	13,800	
Turkey	10,000	10,000	
Other countries	11,400	13,800	
Total, foreign	49,900	64,500	

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MIGHTY ATOM

(Continued from page 29)

mental knowledge of the process of photosynthesis.

At Cornell we have done some research on spraying fruit trees with urea for the purpose of nitrogen fertilization. We became interested in the possibilities of urea tagged with radioactive carbon as a means of studying the rates and methods of urea penetration, translocation, conversion, and use. One important technique with radioactive materials which appears extremely useful is the use of autoradiograms; i.e., radioactive material placed near a photographic plate will take its own picture and show in what tissue of the plant it may be located or concentrated.

Other Radioactive Isotopes

Using radioactive carbon or iodine in hormones and weed killers, rates of penetration and translocation have been followed. A marked effect of spreaders on rates of 2,4-D penetration has been found.

Radioactive calcium is being used at Cornell to study the chemistry of soil liming practices, and radioactive sulfur has been used at the University of California to study spray or dust injury caused by applications of sulfur to citrus foliage. At the State College of Washington, radioactive iron and phosphorus are being used to study chlorosis in plants. Materials such as radioactive cobalt have been used to trace the feeding habits and habitats of insects. Out of such investigations may come improved insect control programs.

The use of radioactive material for fruit research and related fields is still in the infant stage. But it certainly is a field where the use of atomic energy can bear fruitful results, perhaps first of all in fundamental knowledge, but also eventually in practical fruit production.

PLUMS AND PRUNES

(Continued from page 23)

Meager Exports

Exports of California plums have dwindled under present world conditions to a very small figure, some of the better carrying varieties moving in very limited quantities to Cuba, South America, Hawaiian Islands, and the Far East.—F. W. Read.

FOREIGN PRODUCTION—Plums and Prunes

	1948	1949	1950*
Yugoslavia	296,400	385,400	375,000
Russia	115,742	230,000	240,000
Germany	319,690	183,254	190,000
Czechoslovakia	199,416	176,855	180,000
United Kingdom	173,600	133,280	130,000
Bulgaria	120,000	150,000	130,000
Canada	16,773	20,675	12,975
Other countries	768,202	716,065	724,361
Total, foreign	2,010,205	1,997,529	1,942,336

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2. ADD A



3. GET FASTER, BETTER SPRAYING AT FAR LOWER COST!

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25,000
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Standard BES-BLO for one-way spraying, quickly adjustable right or left. Big BES-BLO and Super BES-BLO, quickly adjustable right or left, or for two-way spraying.

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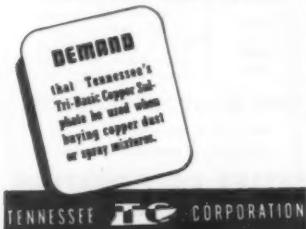
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When you use fungicides bearing the TC trade mark you have the most effective control of persistent fungus diseases—you will find a TC fungicide for practically every purpose.



Free Booklet

Send card or letter to Tennessee Corp., Grant Building, Atlanta, Georgia or Lockland, Ohio.



RED TART CHERRIES

(Continued from page 18)

Slightly more than 50 per cent of the total commercial crop has been canned during the past five-year period. This represents a substantial increase in total pack of canned cherries; but the percentage of the crop that has been canned has been decreasing during the past 20 years.

About 35 per cent of the crop has been processed by freezing during the past five years. Freezing has been increasing in terms of both quantity and percentage of the total crop.

Most of the remaining 15 per cent of the production of the past five years has been utilized for fresh sales, for brining, and for juice manufacture.

Prices Fluctuate

Prices paid growers by processors are indicated by a line in the graph. During the past 10 years, they have ranged from less than \$95 per ton in 1941 to nearly \$300 per ton in 1946. Many processors lost money on the 1949 pack and apparently this situation affected the 1950 price adversely.

Organized Promotion

It is hardly conceivable that consumption could have kept pace with the increase in production during the past 20 years had it not been for effectively organized sales promotion that started with National Cherry Week several years ago.

There are three phases to the current program. Cherry Pie Time begins August 15 with consumer and point-of-sale publicity and advertising. This is followed by Cherry Christmas which places emphasis on press releases to food editors and ties in with advertising in consumer magazines. National Cherry Week ties in consumer advertising and publicity with the cherry pie baking contest in which 30 states participate.

The advertising program is supported by both growers and processors in approximately a five to one ratio. In Michigan the growers' contribution is raised by a tax of one-tenth cent per pound.

Change in Spray Practices

There has been one notable change in production practices. Both lime-sulfur and Bordeaux mixture have given way to copper compounds and such organic fungicides as ferbam, nabam, and other similar materials. Trees sprayed with the copper compounds are likely to produce fruits that are higher in soluble solids and smaller in size than those sprayed with the organic fungicides.—Roy E. Marshall.

WHY PAY FOR RAIN THAT FAILS TO FALL?



Above—HALE CFIR Irrigation Unit Protecting Celery Crop.

Why pay for rain that fails to fall when you need it most?

Why endure a crop loss caused by drought which frequently amounts—in ONE SEASON—to more than the cost of an irrigation system that would prevent it?

By acting now, you can have rain when you want it for the sure protection of your crops . . . for increased profits through larger quantity and better quality!

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LIGHT — only seven pounds.

STRONG — built for rough usage. No protruding arms. Easy to operate, worker fatigue at a minimum. Fully guaranteed.

Dealer inquiries invited. Write to

**The J. T. HENRY MFG. CO.
Specialists in Professional
Pruners Since 1860
HAMDEN, CONN., U.S.A.**

SWEET CHERRIES

(Continued from page 18)

Northwest growers was about 18 cents a pound. Returns to California producers were reported higher due to excellent cherry quality.

These higher prices were partly offset by higher packing costs resulting from the application of new minimum wage laws.

PRICES

SWEET CHERRIES, FRESH

	Season	Average Price Per Ton Received by Grower	Dollars	
*	1939	82.70	1945	272.00
	1940	111.00	1946	280.00
	1941	134.00	1947	256.00
	1942	141.00	1948	224.00
	1943	230.00	1949	155.00
	1944	275.00	1950*	243.00

SWEET CHERRIES, PROCESSING

	1948	1949	1950*
New York	248.00	144.00	146.00
Michigan	230.00	122.00	136.00
Washington	247.00	119.00	202.00
Oregon	261.00	125.00	211.00
California	315.00	162.00	229.00

A large portion of the 1950 Pacific Coast cherry production was marketed in eastern terminal markets. Relatively few cherries were merchandised in the newly developed home canning markets of the Middle West. This change in cherry merchandising was the result of the short supply of fruit and of rain damage in the Northwest.

Tariff Problem

Western cherry growers were deeply concerned in 1949 lest the tariff rates on imported cherries be revised downwards. The possibility of such revision had serious market repercussions the preceding year. Strong representations to Congress and government officials by growers resulted in cherries being left off the list of products for tariff renegotiations.

Little Carryover Predicted

The relatively light tonnage of western cherries going to processing and bringing in 1950 would indicate that little carryover will likely occur in 1951 which in turn would seem to indicate a profitable 1951 processing season for western cherries.

Prepackaging Trends

Of particular significance to the western cherry industry in 1950 was a three-state research study into cherry prepackaging methods. The study was carried on by the Washington State Fruit Commission under contract with the USDA.

Four large western cherry packers are merchandising part of their cherry tonnage in plastic bags, plastic hal-loks, and cartons and trays, usually holding one pound.

One packer has developed an auto-

matic filling machine that empties cherries into one-pound bags, weighs them, and moves them onto an automatic stapler. Another western packer is using the "Stericooler" to effectively precool and retard the over-maturity of cherries.

1951 Outlook

The extent of western cherry production in 1951 is uncertain. Bud set is heavy, but a repetition of last winter's cold weather in the Northwest could work havoc on already weak-

ened trees. Rain damage during harvest represents a constant hazard which makes pre-season estimates highly uncertain.—Fred H. Westberg.

FOREIGN PRODUCTION—Sweet and Sour

	Short Tons	1948	1949	1950*
Germany	146,300	153,300	162,200	
Italy	86,300	118,000	111,200	
Czechoslovakia	74,566	93,721	100,000	
France	64,187	82,733	74,956	
Poland	66,200	69,300	65,000	
Yugoslavia	60,000	65,000	60,000	
Switzerland	42,990	62,831	59,524	
Canada	30,000	30,000	8,100	
Other countries	205,998	248,930	219,576	
Total, foreign	758,490	898,770	848,129	

OVER 95% CLEAN FRUIT AT ONE-HALF THE COST

So stated Harry A. Hatcher, Manager for Thomas S. Smith & Sons, probably the largest growers of fruit in Illinois. During 1950 a BUFFALO TURBINE was used on a 20-acre block at 8x concentrate with all insecticides and fungicides. The trees were 24 feet high with a spread of 30 feet.



Harry A. Hatcher, Manager of the Thomas S. Smith & Sons Illinois orchards.

Thomas S. Smith & Sons have ordered four more machines because—

- The original price is less than on any conventional or concentrate rig now available.
- No maintenance expense.
- The machines pay for themselves in one year.



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Hardwood handle.

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DELIVERS

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125 U.S. GPM
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Above—Side view of Hale Sprayer showing both banks of guns in action.

- The Hale Centrifugal Orchard Sprayer pictured at left will make you money due to efficient coverage; protects quality of fruit.
- Saves time; provides volume large enough to spray as fast as tractor can run. Pumps any desired capacity up to 100 GPM at 600 lbs.
- Saves money. Labor cost is about 1/3 for applying 500 gallons of spray compared to previous methods.
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- Versatile. Hale Sprayers are delivered either skid or wheel-mounted.
- The centrifugal pump has fewer moving parts reducing maintenance to minimum.
- Results prove Hale Sprayer value. Owners enjoy freedom from spray troubles.

Write Department A today for Bulletin #302.
State size of orchard.



HALE FIRE PUMP CO.
CONSHOHOCKEN, PA.

BERRIES

(Continued from page 25)

per 24-quart crate for the smaller 1949 crop. This means that the farm value of the 1950 strawberry crop considerably exceeded the value of about \$64 million for the 1949 crop.

A Third of Crop Frozen

Approximately two-thirds of the 1950 commercial strawberry crop was marketed for fresh use and about one-third was processed, nearly all by freezing. Of the 1949 crop, about 28 per cent was frozen, 1 per cent was canned, and the rest was marketed fresh.

Utilization of strawberries through freezing has more than doubled in the last decade. As a result, per capita consumption of frozen strawberries was nearly 1 pound in 1949, compared with about 2 pounds fresh.

Consumption of fresh strawberries probably increased a little in 1950, but that of frozen strawberries may have dropped somewhat as a result of supplies running low in the spring before the new pack became available in volume.

On October 31, 1950, cold storage holdings of frozen strawberries totaled about 113 million pounds—83 per cent larger than a year earlier. Hence, supplies, are expected to continue ample during the first half of 1951.—Ben H. Pubols.

PRICES

STRAWBERRIES, FRESH

Season	Average Price Per Crate	Received by Grower	
1941	2.48	1944	7.93
1942	3.18	1945	8.61
1943	6.33	1946	9.77

STRAWBERRIES, PROCESSING—1949*

Season	Average Price Per Pound	Received by Grower	
Louisiana			.160
Oregon			.142
Washington			.142

CRANBERRIES

Season Average Price Per Barrel Received by Grower

1936-45	Average	14.20	1947	17.10
1945		20.90	1948	10.10
1946		31.90	1949*	9.23

Season Average Price Per Quart To New Jersey Growers

BLACKBERRIES AND DEWBERRIES

1947	.22	1948	.30	1949*	.20
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RASPBERRIES

1947	.43	1948	.43	1949*	.45
------	-----	------	-----	-------	-----

Record Cranberry Crop

Although a final tabulation of 1950 cranberry production will not be available before late winter or early spring, it is quite possible that, when all reports are in, the figure will pass the million barrel mark for the first time in history.

In late August the USDA forecast a production of 969,000 barrels, in itself a new record figure. While dry weather in many cranberry growing

areas threatened to curtail production, early September rains created a condition under which ripened berries gained considerably in size on the vines.

PRODUCTION

	Average 1939-48	1948	1949	1950*
	Barrels			
Mass.	465,600	605,000	520,000	600,000
N. J.	77,500	69,000	67,000	85,000
Wash.	12,500	23,000	20,000	20,000
Wash.	82,330	42,400	40,000	38,000
Ore.	11,350	13,300	13,400	16,000
5 States	714,580	967,700	840,400	969,000

A small amount of new acreage came into production this year, but virtually no new plantings have been reported.

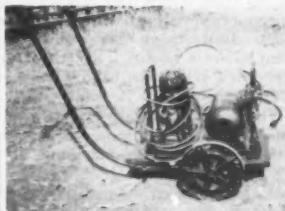
The 1949-50 marketing season was characterized by low prices. For the past two years, in fact, unseasonably hot weather during the early fall has cut heavily into consumer demand and has, consequently, reduced prices as well as customary shipments.

New Trend

A new trend was indicated, however, in the exceptionally strong demand for cranberries which persisted after the first of the year.

It is estimated that total fresh sales from all shipments of the 1949-50

HANDY ANDY



Homemade and handy is this portable air compressor, designed by M. S. Holmes of Hampton, N. H., who mounted it on lawn mower wheels and attached baby carriage handles. When his spraying outfit or other farm vehicle develops a soft tire, he moves this compressor to the scene of trouble.

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crop approximated 550,000 barrels, or 64 per cent of the total crop. The remainder, 306,000 barrels, or 36 per cent of the crop, went to processors. It seems likely that much the same pattern of crop distribution will apply during the 1950-51 marketing season.—C. M. Chaney.

JANUARY, 1951

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ELGETOL 318—For use on apples, cherries, prunes, plums and certain cane fruits for controlling aphid, scale, bud moth and light to medium infestations of red mite. Use ELGETOL 318 only during the dormant period . . . do not use after the buds swell.

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For the past 3 years, ELGETOL has been giving excellent results in a new test program for the control of Apple Scab. It consists of a combination of two control methods — an orchard floor spray using ELGETOL in the late dormant, and the use of Mercurials in the later sprays. Write for new ELGETOL circular describing this orchard floor spray program.



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RIVET-O MFG. CO.

56 Orchard St., Orange, Mass.

GRAPES

(Continued from page 22)

Seedless, which can be used for raisins, table, or wine.

The three-way Thompsons complicate matters. In the past heavy bidding by the wineries has been followed by a huge crush and a slighting of the raisin lay. The heavy crush would produce such low wine prices that the entire industry would be demoralized. In 1950 with bulk wine prices advancing from 35 cents a gallon in tank carlots to the relatively good price of 85 cents, the industry decided to get together to prevent another heavy crush.

Under their Federal Marketing Order set up in 1949, they assess themselves and they used some of this money to buy page advertisements, asking the farmers to dry their raisin grapes. A price of \$270 a ton for raisins encouraged drying, and the wineries held back their price to \$55 a ton for fresh grapes or the equivalent of \$220 a ton for raisins at a 4 to 1 dry-away.

Half the state's grape crop will be crushed, and the raisin crop of some 147,270 tons is only 55 per cent of the 1949 crop, but it could have been much worse. One of the things the raisin group feared was losing the baking trade which they had spent so much money wooing back into camp in 1949. Last season they could offer them 9½-cent raisins. This season, to everyone's relief, the baking trade is taking raisins at 17½ cents.

The amount of fresh grapes available for the table trade has been a little below the 10-year average. By the end of October some 5,184,511 packages had been shipped, averaging \$3.46. By the same date in 1949 some 5,602,000 packages had been shipped but the average was only \$2.54.

Cold Storage Facilities Expanded

The fresh market has been strong and only recently is slackening off. Two of the biggest developments in the fresh trade have been the tremendous expansion of cold storage facilities for storing Emperors and Tokays and, secondly, the big increase in truck shipments.

California's record Emperor crop in 1950 was moved into the big new cold storage facilities—almost five million packages. The cold storage of Tokays is relatively new and some half million packages went into cold boxes.

Truck Shipments Increase

There has been a 60 per cent increase in truck movement this season.

In the month of October the following number of packages moved to the following states: 130,000 lugs to Texas, 55,000 to Utah, 30,000 to Colorado, 25,000 to Kansas, 47,000 to Washington. By the end of October the equivalent of 2,000 rail cars of grapes had moved out of the state by truck. During the same period some 24,000 rail cars had moved, full of grapes.

With wine grapes at \$50 a ton, raisins at \$270 a ton, and almost \$18 million worth of fresh grapes sold in auction, with more to come out of cold storage, it looks like a prosperous year for California's grape growers.—Jack T. Pickett.

VALUE OF CROP

	U.S. Thousand dollars	California Thousand dollars
1939	39,834	30,470
1940	42,302	34,831
1941	65,725	57,036
1942	85,174	72,187
1943	184,550	169,363
1944	213,689	194,083
1945	164,193	149,876
1946	296,491	267,789
1947	122,147	102,082
1948	121,460	102,936
1949	94,882	78,900

VALUE OF GRAPE CROP BY UTILIZATION

	1947	1948	1949
California	Dollars	Dollars	Dollars
Raisins	56,542	59,786	46,780
Wine	17,268	22,134	16,032
Table	28,272	21,016	16,088
All other states	20,065	18,524	15,982

Low Prices for Muscadines

The muscadine grape growers in Georgia received \$100 per ton (5 cents per pound) delivered to the winery for the 1950 crop. This was \$40 less per ton than the top price of 1949, and \$125 less per ton than that received for the 1947 and 1948 crops. It is estimated that 70 per cent of the marketed fruit was the Hunt variety, 20 per cent Scuppernong, and 10 per cent miscellaneous varieties. A number of growers grossed 8 to 10 cents per pound delivered to nearby markets for retail trade.—M. M. Murphy.

EXPORTS, FRESH

	1947-48	1948-49	1949-50*
Canada	47,690	49,467	59,739
Mexico	6,155	2,165	1,540
Cuba	4,280	4,493	5,143
Brazil	3,518	1,766	670
Philippines	17,700	16,311	8,174
Other countries	15,010	500	16,055
Total	94,553	74,719	91,321

FOREIGN PRODUCTION—Short tons

	1948	1949	1950*
France	6,997	6,340	8,624
Italy	6,378	6,520	5,622
Algeria	4,363	4,991	5,175
Spain	2,485	2,520	3,098
Turkey	1,786	2,409	1,633
Argentina	1,543	1,918	1,550
Portugal	1,349	1,261	1,257
Other countries	8,189	8,062	7,986
Total, foreign	32,090	34,021	34,945

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From where I sit ... by Joe Marsh

How Would You Say It?

Curley Larson's cousin from back East and a few of us got talking when he was here visiting, and I couldn't help noticing how different he said things.

For instance, he said, "Lifting that 200-pound bag of cement almost killed me." "You mean sack of cement?" asks Curley. (That's how we'd say it.) "No," interrupts young Elliott who'd spent a lot of time down South. "He means a 'poke of see-ment.'"

It was good for a chuckle, anyway. Bag, sack or poke—we knew what he meant whatever way he

said it. It just depends on where you are in the U. S., which way sounds right.

From where I sit, whenever we start criticizing someone for sounding funny to us, we ought to think how we sound to them. It's like when you choose your liquid refreshment. I'm accustomed to a moderate glass of beer—you may like ginger ale—but who's to say the other's wrong? I'd say we're both right!

Joe Marsh

Copyright, 1949, United States Brewers Foundation

CITRUS

(Continued from page 20)

oranges for processing, \$2.75 a box for packed fruit for fresh shipment, and although the deal wavered a bit, it held firm.

Grapefruit has brought somewhat lower prices and late in December, with reports indicating that Texas had been hard hit in a freeze and grapefruit was falling to the ground, it was indicated that the Florida deal would strengthen considerably. Since the freeze of January, 1949, when Texas was hard hit, Florida has been able to recapture some of the mid-western markets which for years had belonged almost exclusively to the Rio Grande Valley because of freight rates and was making a strong effort to hold these outlets.

A hard-hitting and highly competitive Florida citrus advertising campaign has been formulated by J. Walter Thompson Co., Inc., the advertising agency now handling the Florida Citrus Commission account for the first season.

Outstanding Co-operative Effort

No review of the year in Florida citrus would be complete without reporting that after a somewhat dubious and shaky start, Florida Citrus Mutual, by virtue of the success in holding the market level with the use of price floors and prorates, has gained considerably in stature and prestige and now appears to be a fixed agency in the deal.

Many things have been given credit for the strengthening of the Florida citrus deal, especially in face of the first 100 million-box crop in history, but probably the one greatest factor is the backing which the industry has given Mutual. It has been estimated that the fresh fruit packing houses and processing plants which are under contract to Mutual could, in a pinch, handle the entire Florida citrus crop in about half of a normal season of eight to nine months.

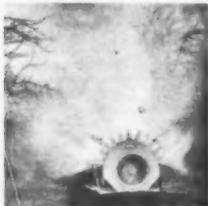
Big Expansion in Concentrates

The year has found several of the big concentrates firms expanding their operations by buying grove acreage, expanding their plant facilities, and broadening the base of their merchandising.

It has been estimated that the concentrates producers, such as Birds Eye, Snow Crop, and Minute Maid, have spent something like \$4 million in advertising their brands, supplementing the \$2½ million which is spent by the Florida Citrus Commission in advertising and promoting Florida citrus without reference to any brand name.

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Would you like to see the proof? Write for "Report of Scientific Tests." The Hygienic Products Company, Dept. 85, Canton 2, Ohio.

Sani-Flush



At all grocers—
in the familiar yellow can

APPLES

(Continued from page 15)

has continued to hold good.

The excellent movement of the 1949-50 pack, especially of canned apple sauce, was mainly a result of three "pluses": 1) Quality was generally the best yet; 2) processors did more active merchandising; and 3) retail organizations accepted the urging by National Apple Institute to stock, display, and feature apple products at the height of the apple season onward; and, to the surprise of many, it worked. Thus, this season's pack is shooting for a record in sauce and high levels in most other apple products.

Fall Season Opened Late

Lateness of the season resulted in a delay of two to three weeks in the fall fresh apple market; however, the superior keepability of much of the apples in storage offers the possibility of regaining some of this at the end of the season.

Unfortunately, it has taken longer than growers can afford for consumers to learn that the quality of the 1950 crop is much above average. Under pressure of lateness, far too many immature apples were marketed in September which did not fetch consumers back for second helpings.

Market Values Higher

But, with practically as many apples to be sold in the fresh market as last season, and considering the necessary sacrifice of large quantities in all but a few areas, it is noteworthy that current market values are 50 cents to \$1 higher practically everywhere except in the Northeast where the harvest period pressure has been greatest. The adage still holds that there is no such thing as a "normal" apple season. —Truman H. Nold.

EXPORTS, FRESH

	1947-48	1948-49	1949-50*
	Thousands Bushels		
Canada	194	58	145
Mexico	176	37	31
Cuba	294	230	274
Sweden	287	0	11
United Kingdom	9	1	75
Belgium & Luxembourg	35	270	190
Philippines	887	340	379
Other countries	772.1	425.9	1,132
Total	2,546	1,361	2,929

IMPORTS, FRESH

	1948	1949	1950*
	Thousands bushels		
France	85,734	114,914	208,769
Switzerland	29,854	11,942	28,706
Germany	29,000	34,100	28,300
Italy	17,379	30,919	26,065
United Kingdom	23,181	29,100	23,000
Belgium	3,218	18,572	17,779
Canada	13,404	18,151	15,691
Japan	13,962	15,500	14,000
Other countries	114,564	113,668	108,696
Total, foreign	331,577	406,772	467,006

FOREIGN PRODUCTION

	1948	1949	1950*
	Thousands bushels		
France	85,734	114,914	208,769
Switzerland	29,854	11,942	28,706
Germany	29,000	34,100	28,300
Italy	17,379	30,919	26,065
United Kingdom	23,181	29,100	23,000
Belgium	3,218	18,572	17,779
Canada	13,404	18,151	15,691
Japan	13,962	15,500	14,000
Other countries	114,564	113,668	108,696
Total, foreign	331,577	406,772	467,006

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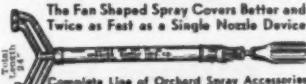
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POLE TREE TRIMMERS No. 1-R—(compound lever, easy cutting) 6 ft. pole. Other lengths up to 18 ft.
P. SAW No. 44—(16-inch curve saw cuts freely) 8 ft. Other lengths.

BARTLETT MFG. CO.
3003 E. Grand Blvd., Box 44, Detroit 2, Mich.
JANUARY, 1951

NEW FRUIT VARIETIES (Continued from page 32)

CHERRY

Black Sour.—Originated in Rahway, N.J., by a Mrs. Dolechek who imported seeds from Rumania. Introduced commercially in 1949 by the Ackerman Nurseries, Bridgeman, Mich. Parentage unknown; selected in 1935. Fruit: skin color dark red; sour; most nearly resembles May Duke but is darker in color.

Star.—Originated in Summerland, British Columbia, Canada, by the Dominion Experimental Station (A. J. Mann). Introduced commercially in January, 1949. Open pollinated seedling of Deacon selected in 1944. Fruit: dark red; resembling Deacon in shape and Bing in taste, firmness, and quality; ripens a week earlier than Bing. Tree: moderately heavy bearer; hardy.

CHERRY PLUM

Honey Dew.—Originated in Brookings, S.D., by the South Dakota State College. Introduced commercially in 1950. *Prunus benzeyi* x Gold plum; discovered in 1930. Fruit: early; high quality; most nearly resembles Opata.

CHESTNUT

Kulling.—Originated in Philema, Ga., by the USDA. Introduced commercially in June, 1949. Grown as a nursery seedling from nuts (*Castanea mollissima*) imported from South Central China in 1938. Nuts: 35-40 per pound; dropping free from burr; mid-season; keeping quality very good. Tree: medium large, vigorous; shoot growth slightly willow; moderate upright in form.

Milano.—Originated in Philema, Ga., by the USDA. Introduced commercially in June, 1949. Grown as a nursery seedling from nuts (*Castanea mollissima*) imported from South Central China in 1938. Nuts: 35-40 per pound; dropping free from burr; mid-season; good keeping quality. Tree: vigorous; straight shoot growth fairly stocky; early and heavy bearer.

Nanking.—Originated in Philema, Ga., by the USDA. Introduced commercially in June, 1949. Grown from seed (*Castanea mollissima*) imported directly from South Central China in 1938. Nuts: 30-43 per pound; uniform in shape; few with split shells. Tree: vigorous; precocious; heavy bearer of annual crops; midseason pollination; medium late harvest.

CRANBERRY

Buckwith.—Originated in Beltsville, Md., by the USDA (H. F. Bain and H. F. Bergman). Introduced commercially in 1950. McFarlin x Early Black; selected 1938 to 1940. Fruit: large; late maturing. Vine: productive; resistant to rot and false blight.

Savanna.—Originated in Beltsville, Md., by the USDA (H. F. Bain). Introduced commercially in 1950. McFarlin x Potter; selected 1938 to 1940. Fruit: very large; medium late; firm. Vine: vigorous; very productive.

Wilcox.—Originated in Beltsville, Md., by the USDA (H. F. Bain). Introduced commercially in 1950. Howes x Seearis; selected 1938 to 1940. Fruit: very early ripening. Vine: very productive.

GRAPE

Black Beauty.—Originated in Newton, Ill., by L. A. Richards. Introduced commercially in 1949. Parentage unknown; selected in 1940. Fruit: large; black; good for jelly, wine, and dessert; ripens October and early November. Vine: self pollinating; heavy producer; regular bearer. Labrusca type.

LEMON

Frost Eureka.—Originated in Riverside, Calif., by the University of California Citrus Experiment Station (Howard B. Frost). Introduced commercially in 1948. A mucellar seedling of Eureka; selected in 1918. Fruit: most nearly resembles Eureka. Tree: added vigor and disease resistance in comparison with other strains of Eureka.

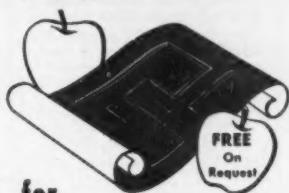
NECTARINE

Early Le Grand.—Originated in Merced, Calif., by F. W. Anderson. Introduced commercially in 1950. Parentage unknown; selected 1949 to 1950; assigned to Reedley Nursery, Reedley, Calif. Open pollinated seedling of Le Grand; selected in 1947. Fruit: resembles Le Grand but ripens two to three weeks earlier.

Mabel (California 27-12 and California 27-13).—Originated in Winter, Calif., by the California Agricultural Experiment Station (Guy L. Philp). Introduced commercially in the fall of 1948. Humboldt x Burbank; selected in 1942. Fruit: flesh yellow; freestone; skin highly colored; matures in early midseason. Named in honor of Mrs. Guy L. Philp.

Philip (California 27-12).—Originated in Winter, Calif., by the California Agricultural Experiment Station (Guy L. Philp). Introduced commercially (Continued on page 66)

DETAIL PLANS



FRUIT STORAGE

Basic construction plans for expandable fruit storage in units from 5,000 to 15,000 bushel capacity, including details on the installation of PALCO WOOL insulation are available, with no obligation. Economy and compactness of arrangement plus proper application of PALCO WOOL low-temperature insulation contributes to maximum operating efficiency. Write today for free plans and blueprints.



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SPRING OLD HOME PEAR—Small fruits in choice and
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Maywell—Originated in Ontario, Calif., by Chaffey College (George P. Weldon). Introduced commercially October 1, 1948. Mayflower x Weidman; selected in 1945. Fruit: freestone; flesh white; skin yellow or greenish with attractive blush; large; shape excellent; ripens about five days later than Bahcock. Tree: very fruitful; early foliation; well adapted to southern California conditions.

Merrill Necta-Health—Originated in Red Bluff, Calif., by Grant Merrill. Introduced commercially in January, 1950. J. H. Hale x Quetta; selected in July, 1940. Fruit: flesh white; clingstone; larger, more persistent, more red color on skin and around pit; and four weeks earlier than White Haven. Tree: it most nearly resembles.

Merrill Scholodays—Originated in Red Bluff, Calif., by Grant Merrill. Introduced commercially in January, 1950. Open pollinated seedling of J. H. Hale; selected in August, 1942. Fruit: flesh yellow; freestone; ripens three weeks later than J. H. Hale which it most nearly resembles. Tree: very vigorous, self fertile.

Merrill Surprise—Originated in Red Bluff, Calif., by Grant Merrill. Introduced commercially in January, 1950. Open pollinated seedling of July Elberta; selected in June, 1944. Fruit: flesh yellow; freestone; ripens three weeks earlier than July Elberta, which it most nearly resembles.

Merrill Yellow King—Originated in Red Bluff, Calif., by Grant Merrill. Introduced commercially in January, 1950. Open pollinated seedling of J. H. Hale; selected in June. Fruit: flesh yellow; ripens about one week later than J. H. Hale; which it most nearly resembles. Tree: self fertile.

R. L. Stoner—Originated near Dayton, Ohio, by R. L. Stoner. Introduced commercially in 1948. Patent No. 798; May 11, 1948; assigned to R. L. Stoner, Dayton, Ohio. Bud sport of Early Elberta; discovered in 1939. Fruit: blushing; pale yellow; freestone; flesh creamy firm; fine textured; shipping and canning quality good; most nearly resembles Belle of Georgia. Tree: vigorous, consistent bearer; very hardy.

Rubidoux—Originated in Riverside, Calif., by the University of California Citrus Experiment Station (J. E. Lesley). Introduced commercially in 1948. Accessions include: Elberta; Lukens Honey; Peacock; selected in 1940. Fruit: large; freestone; flesh yellow; dull red blush; firm; ripens about 10 days after J. H. Hale; keeps well. Tree: vigorous; prolific; short winter chilling requirement.

S-37 (Strilling's 37-18)—Originated in Strilling's Nurseries Experiment Station, Atwater, Calif., by Thomas B. Strilling, Jr. Introduced commercially in 1947. Patent No. 904; December 6, 1949; assigned to Thomas B. Strilling, Jr., Strilling's Nurseries, Merced, Calif. Seedling of the original fruiting branch from seeds planted in 1935; selected at 1937. A rootstock resistant to nematode and crown gall.

Sole (Summerland 8-11-3)—Originated in Summerland, British Columbia, Canada, by the Dominion Experiment Station (J. E. Britton). Introduced commercially in November, 1948. Elberta tree; cross made in 1933; selected in 1941 by A. J. Mann. Fruit: large; flesh yellow; juicy; firm; freestone; easily handled with minimum amount of bruising; promising canning variety; ripens with Valiant and Veteran; most nearly resembles J. H. Hale. Tree: heavy annual bearer; medium size; moderately hardy; requires heavy thinning.

Vesper (Ontario 290150)—Originated in Vineland, Ontario, Canada, by the Ontario Horticultural Experiment Station. Introduced commercially in 1949. J. H. Hale x Vedette; selected in 1941. Fruit: medium size; yellow; freestone; good quality; subject to bacterial leaf spot; ripens five days later than Elberta.

Vetter Elberta—Originated near Reedley, Calif., by Joseph J. Vetter. Introduced commercially in January, 1948. Patent No. 966; July 18, 1950; assigned to Roy and Ruth Vetter's Nursery, Vernalis, California. Vetter's Vetta. Bud mutation of July Elberta; discovered in June, 1940. Fruit: flesh yellow; freestone; ripens about June 10, some three weeks earlier than its parent; keeps well. Tree: strong grower; blooms four weeks later than July Elberta; yields well.

Victor (W2-18C)—Originated in Palo Alto, Calif., by the USDA, California Agricultural Experiment Station (W. F. Wright). Commercially introduced in May, 1950. (Maxine x Leader) x ((Tuscan x Paloro) x (Paloro x Pratt-Low)); selected about 1936. Fruit: good size, round, smooth, yellow; flesh creamy firm; clinging; flesh firm, fine textured, yellow, very sweet at pit; flavor good; canned; matures about five days after Fontina and nine days before Cortes.

Welberta—Originated in Ontario, Calif., by Chaffey College (George P. Weldon). Introduced commercially October 1, 1948. Welder x Elberta; selected in 1945. Fruit: freestone; flesh yellow; skin yellow with red streaks; firm; quality good; ripens 10 to 14 days ahead of Elberta which it most nearly resembles. Tree: resistant to delayed foliation; adapted to southern California conditions.

Wickerham—Originated in Yakima, Wash., by J. A. Wickerham. Introduced commercially in 1948. Patent No. 821; February 1, 1949; assigned to May Nursery Company, Yakima, Wash. Par-

(Continued on page 68)

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The NEW,
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Ripening 40 days ahead of Elberta

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JANUARY, 1951

fax x unnamed seedling; selected in 1937. Fruit: medium to large; solid red; turns red on inside before completely colored on outside; no core; no green tip; smooth skin; high freezing and shipping qualities. Plant: everbearing in some localities; heavy producer.

Luster.—Originated in Merchantville, N.J., by Oscar Earle Felten. Introduced commercially in 1949. Patent No. 293; March 28, 1950; assigned to O. E. Felten and W. T. Wilkins, Merchantville, N.J. Seedling 3001 (Howard E. Marvel) x Seedling 3700 (Premier x Marvel); selected in 1945. Fruit: large; flesh firm; skin fairly tough; seeds in position to protect berry in shipment; most nearly resembles Sparkle. Bush: stems bold berries off ground.

Mildred Felten.—Originated in Merchantville, N.J., by Oscar Earle Felten. Patent No. 296; September 16, 1947; assigned to Oscar E. Felten, Fairfax x Seedling 3001 (Premier x Marvel); selected in 1934. Fruit: larger, tarter, lighter colored than Fairfax, which it most nearly resembles; picking season is longer than Fairfax and later berries are much better. Plant: larger, heavier than Fairfax.

Stout.—Originated in Cheyenne, Wyo., and North Platte, Neb., by the Horticultural Field Station and the North Platte Experiment Station (Le Roy Powers and Glenn Veihmeyer). Introduced commercially October 11, 1948. (Fairfax x Fairytale) x 3001 (Premier). Fruit: good quality. Plant: extreme winter hardiness.

Tennesseean (Tennessee 968).—Originated in Jackson, Tenn., by the West Tennessee Experiment Station (Brooks D. Drain). Introduced commercially in 1950. Tennessee Selection 230 x Tennessee Selection 580; selected in December, 1949. Fruit: early; commercial quality; most nearly resembles Howard 17.

Utah Skipper.—Originated in Brigham City, Utah, by Larsen Experimental Farm (L. L. Larsen). Introduced for trial in 1950. Lindanicus x Catakill; selected in 1947. Fruit: medium red; large to extra large; very firm skin; good shipper; most nearly resembles Lindanicus except color is lighter. Plant: heavy cropper.

TANGERINE

Frua.—Originated in Riverside, Calif., by the University of California Citrus Experiment Station (Howard B. Frost). Introduced commercially in 1950. King tango x Dancy tangerine; selected in 1925. Fruit: larger than Dancy, which it most nearly resembles; ripens earlier; few seeds; peels easily.

TANGO

Dwight.—Originated in Riverside, Calif., by the University of California Citrus Experiment Station (Howard B. Frost). Introduced commercially in 1950. Mediterranean sweet orange (synonym of Maltese Oval) x Dancy tangerine; selected in 1930. Fruit: most nearly resembles Dancy in flavor and Valencia in size; juice easily extracted.

A NEW
Introduction
THE ALBRU PEACH

PLANT PATENT 813
TO-DAY'S OUTSTANDING PEACH VARIETY
Write for Literature
FRENCH NURSERY CO.
At Clyde, Ohio Since 1863

Newest Plant Introductions by Dr. N.E. Hansen

Dr. N.E. Hansen
Greatest Plant
Breeder of Today
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FREE
Illustrated
Catalog
HANSEN NURSERY, Dept. AF-1, Brookings, S.D.

A PROFITABLE ORNAMENTAL BLUEBERRIES

Blue CULTIVATED BLUEBERRIES. Exquisite white blossoms grow six feet high. Bear in four weeks with a single family. Big Money-maker for planters. Sell from \$6 to \$12 for a quart. Fully described in our catalog of over 100 rare blueberries in plants, trees and shrubs. Write now.

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Greatest Wonder of the Fruit World
One ideal apple tree for the small home owner. Thick skin, crisp, juicy, delicious. Five kinds on one tree—Anasaz, New Jersey, Red Delicious, Yellow Delicious and Green Delicious—all on one beautiful shade tree. Apples all season long. Beautiful blossoms. Write for our catalog of over 100 rare varieties in plants, trees and shrubs. Write now.

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Also full line of Fruit Trees, Plants, Shrubs, etc. Write today for Free Catalog.

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Red Rich is the largest, juiciest and most delicious everbearing red strawberry. Also a complete line of other popular strawberry varieties. Full descriptions in our FREE catalog. Over 100 rare varieties, including: Wild strawberries, everbearing, annuals, trees, and shade trees. Write today for your FREE copy.

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We Have the NEW DELAWINNE APPLE

It Has the Shape and Color
of a Red Delicious . . . Flavor
of a fine Staymen Winesap!
PLUS

All the GOOD Points to Make It a
Successful Commercial Apple:

1. Fruit shaped and colored like a deep red Delicious.
2. Apportioning, Juicy flavor of a fine-quality Staymen Winesap.
3. Tree strong-growing and very spreading, rather upright.
4. Large, rather rough leaves which catch and retain spray or dust.
5. Rootstock unknown, as this is a new variety, but indications are it is much more durable than Delaunay.
6. Fines late fall and early winter apple. (Apparently a good keeper but not thoroughly tested.)

**HENRY FIELD
SEED & NURSERY CO.**
Shenandoah, Iowa

FRUIT TREES

We specialize in growing in high quality nursery stock for fruit growers. Apples, Pears, Plums, Cherries, Berries, Grapes, Berry Plants, Honey, Evergreens and Flowering Shrubs. Write for colored Catalogue with Money Saving Prices.

EAST'S NURSERY
Box 450 AMITY, ARKANSAS

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OPPORTUNITY ADS.

Only 25¢ a Word—CASH WITH ORDER! Count each initial and whole number as one word. ADDRESS AMERICAN FRUIT GROWER, 106 Euclid Ave., Willoughby, Ohio.

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HELM'S PULLORUM CLEAN CHICKS. CERTIFIED Leghorn. Naturally famous. Thirty years continuous flock improvement leading to record production. Leghorn Holder three world records. Breeding Institute, ILLINOIS HATCHERY, Metropolis, Illinois.

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SACRIFICE HOME BECAUSE OF RIVERSIDE County. Modern, suitable, return price. For details: JOHNSON, 10196 Gramercy, Arlington, Calif.

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CHAINS—TRACTOR, TRUCK, ROAD GRADER, BUR. Write for circular, give tire size—Prompt shipment. HORNER TRACTOR SALES, Geneva, Ohio.

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SELL PATENTED EQUIPMENT—AN UNUSUAL OPPORTUNITY that only fully patent protected equipment offers. Sell as dealer or factory agent new line of Aqua-Jet Rooms that will do every orchard spraying power-sprayer. Bells readily believe it is a great idea. We can help you with an orchard spraying job equaling that of the most costly brands. When writing for details be sure to explain your experience, outlet, market, and the time you have available and how much time you can devote to selling. Write today: HUET INDUSTRIES, INC., San Jose, California.

FARM FOR SALE

500 ACRE RANGE: GOOD HOUSE, PLENTY WATER, good for cattle. 1000 sheep, 1000 head of cattle of all kinds. Creek on property. Now leased for oil and have royalty. WRITE BOX 376, Smithville, Texas.

CORN CENTER DOIN'S



"Land's sakes—yer Paw better git over his enthusiasm for them new Power-Curve tires before he kills bissell!"

When you see the hard-nosed cleats and open center tread design of B. F. Goodrich Power-Curve tires, you'll be enthusiastic, too! BFG has reinforced those hard-nosed cleats with a special curve so they'll bite in, won't roll back. They're higher at the center than the cleats of the other two leading brands—higher for deeper bite and maximum traction. With more rubber in

FOR SALE—EQUIPMENT & SUPPLIES

FOR SALE: COON'S APPLE PEELER, SLICER AND endive chain haul, all stainless steel. New last fall, used twice. Price \$1,000.00. Call or write, \$400.00 will suffice for \$350.00. FOR Barrington, Illinois JOHN KELD, Barrington, Illinois.

FAMOUS FARM CATALOG—FREE! WRITE NOW FOR FREE! 1948 EDITION. 1948 Catalog. Thousands of Bargains in Farming, Farm, Building, Farm Equipment, Baby Chicks, Garden Tools, Hardware, Household Appliances, Clothing, Motorcycles, pianos and savings on every purchase. JIM BROWN, Dept. P4, Cleveland, Ohio.

WITH 1948 HARVEST, WE TERMINATE OUR APPLE equipment. We have now to sell our two Taylor Parkin Machines—type XRL—each draws 1000 hours brushes and eliminators; one Farquhar Hydraulic Cider Press Model A with 1000 hours; numerous other items of apple orchard processing equipment; including three Sprayer, and other miscellaneous packing equipment. All are in excellent running condition. Private sale on interview. Name, 100 or write SHARROCK FARMS CO., Washington, New Jersey.

HELP WANTED

WANTED: EXPERIENCED ORCHARD FOREMAN, 240 acres apples and mixed fruits. Located near Detroit, Michigan. Must be reliable, honest, and hard working. House furnished, steady employment. Excellent opportunity right man. Apply BOX 111, AMERICAN FRUIT GROWER, 106 Euclid Ave., Willoughby, Ohio.

WANTED: EXPERIENCED HARRIARD MAN ON A 12-acre apple orchard and raising berries. Write JOHN WENG, Longmont, Colo.

HORSE TRAINING

"HOW TO BREAK AND TRAIN HORSES"—A BOOK written especially for the amateur horseman; no obligation. Remit address: BERRY, 101 HIGH ST., HORSEMANSHIP, Dept. 1381, Pleasant Hill, Ohio.

MISCELLANEOUS

ADVERTISING PENCILS—KEEP YOUR BUSINESS before the eye of the public. Write for samples and prices. EASTERN ARTCHAFT, P. O. Box 5252, Philadelphia 25, Pa.

MAKE MONEY ADDRESSING ENVELOPES. OUR instructions reveal how. PAUL GLENWAY, 2113 Euclid, Cleveland 3, Ohio.

FREE CATALOG—SAVE ON COTTONS—THRILLING values for family and child wear, underwear, dresses, etc. Write for catalog. SOUTH CAROLINA MILLS, Dept. 268, Spartanburg, S. Carolina.

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YOUNG ESTABLISHED ORCHARD MAIN HIGHWAY, stone house, all improvements, stream, fish pond, for details write FERNDALE ORCHARDS, Ferndale, Bucks County, Pa.

FOR SALE: 99 ACRES BEARING ORCHARD, McINTOSH, Jonathan, Ray, few others, near Marshall, Michigan. Write AMERICAN FRUIT GROWER, Box 113, 106 Euclid Ave., Willoughby, Ohio.

100 ACRES, 41 ACRES OF APPLES, 18 ACRES peaches, 50 acres tilable, \$16,000 of orchard equipment, cider press, etc. Price \$35,000. RAY L. McNAMARA, 536 W. Broadway, Elkhart, Indiana.

POULTRY

POULTRY FARMERS, BROILER GROWERS, TURKEY raisers read the new American Poultry Journal for latest ideas and greater profits. 12 months, \$2. Special offer. 10 issues, \$1.50. AMERICAN Poultry JOURNAL, 545 South Clark, Chicago, Ill.

Raise TURKEYS THE NEW WAY. WRITE FOR FREE information explaining how to make up to \$2,000 in your own backyard. Address: NATIONAL TURKEY INSTITUTE, Dept. 222, Columbus, Kansas.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D.C.

WANTED TO BUY

WANTED: USED APPLE-Peach BUSTER IN GOOD condition. Capacity: 150 to 200 lbs. per hr. HOCKEBERGER FRUIT RANCH, Caldwell, Idaho.

PEACHES

(Continued from page 17)

East and the West, is being felt in the market now. The disturbing note in the new variety situation comes from the fact that the "niche" in the market enjoyed by certain areas when Elberta was dominant is being encroached upon by earlier or later varieties grown either farther north or farther south.

The quantity of freestones canned this past season was reduced considerably by the short crop in the Northwest. Home canning and freezing seem to have been much lighter than in the war years. The sugar scare of mid-summer blew over when the public was given the facts promptly by the USDA.

Stimulating Demand

Market promotion through radio, newspaper advertisements, store posters, and tie-in ads went along as usual. Television promotion was tried in some areas with satisfactory response. Market promotion by regions was active and paid off. Results from retailer education programs have brought about a step-up in the know how in handling this commodity as it proceeds through the trade channels.—M. J. Dorsey.

EXPORTS, CANNED

	1947-48	1948-49	1949-50*
	Thousands, Pounds		
Canada	9,350	607	460
Belgium & Luxembourg	6,378	5,502	5,073
Cuba	3,863	6,251	7,926
Philippines	1,165	1,904	833
United Kingdom	20	5	1
Other countries	8,815	6,264	14,293
Total	30,834	20,527	31,775

FOREIGN PRODUCTION

	1948	1949	1950*
	Thousands bushels		
Italy	8,793	10,638	11,413
Argentina	6,500	5,500	5,500
France	2,990	5,948	5,259
Australia	2,204	2,138	2,500
Mexico	2,233	2,296	2,300
Japan	1,470	1,500	1,500
Canada	1,740	1,110	1,070
Other countries	5,965	6,862	5,805
Total, foreign	31,915	37,892	36,437

AMERICAN FRUIT GROWER



Lower your costs and upkeep with new 1951 Chevrolet Trucks

They're tough and they're thrifty, these new Chevrolet Advance-Design trucks for 1951. They're engineered from the ground up to deliver power where you need it, when you need it—as long as you need it. They're built to carry heavy loads, and to stay on the job day after day, mile after mile. They make every drop of gas deliver its utmost in power output—no other type of engine matches valve-in-head efficiency. They have cabs built for greater driving comfort. See the ideal combination of hauling power and economy—the new 1951 Chevrolet trucks—at your Chevrolet dealer's today.

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN



Advance-Design Trucks



Get more horsepower at the clutch

Chevrolet heavy-duty models with Loadmaster engine have greater horsepower at the clutch than any of the principal standard-equipped conventional makes in their class, 14,000 to 16,000 lbs., G.V.W.



Cut your costs on gas and oil

The high efficiency of Chevrolet's great valve-in-head engines means that fuel burns more evenly and smoothly. This means more miles per gallon, less money spent for gas and oil, all-around economy.



Save on purchase price—gain on trade-in

Chevrolet's low prices save you money right off the start. And you save again when trade-in time rolls around. As America's most popular truck, Chevrolet traditionally has greater trade-in value.

Check Chevrolet's Advance-Design Features: TWO GREAT VALVE-IN-HEAD ENGINES—the 105-h.p. Loadmaster or the 92-h.p. Thriftmaster—to give you greater power per gallon, lower cost per load • POWER-JET CARBURETOR—for smooth, quick acceleration response • DIAPHRAGM SPRING CLUTCH—for easy-action engagement • SYNCHRO-MESH TRANSMISSIONS—for fast, smooth shifting • HYPOID REAR AXLES—for dependability and long life • NEW TORQUE-ACTION BRAKES—for light-duty models • PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES—for medium-duty models • NEW TWIN-ACTION REAR BRAKES—for heavy-duty models • NEW DUAL-SHOE PARKING BRAKE—for greater holding ability on heavy-duty models • NEW CAB SEATS—for complete riding comfort • NEW VENTIPANES—for improved cab ventilation • WIDE-BASE WHEELS—for increased tire mileage • BALL-TYPE STEERING—for easier handling.

FARM NEWS from DU PONT

Control Mites in Fewer Sprays with **DU PONT** **EPN 300** Insecticide

Now you can protect your orchards from European red mite, Two-spotted mite, Pacific mite, Willamette mite and Schoene mite with effective EPN 300 Insecticide. This new product of Du Pont research gives you new advantages:

Effective clean-up. EPN 300 produces prompt results so you get relatively quick control of mites on apples, pears, peaches and other stone fruits, and nuts.

Long-lasting control. Residual action of EPN 300 is good. Thus you need fewer sprays to keep mites down.

For other pests, EPN 300 also shows promise against pear psylla, plum curculio and certain other insects attacking fruit trees.

Compatible. EPN 300 mixes readily with most other pest-control chemicals, and with "NuGreen" nitrogen fertilizer.

See your dealer for EPN 300 Insecticide and for other Du Pont pest-control products. Ask him for free booklets, too, or write Du Pont, Grasselli Chemicals Dept., Wilmington 98, Delaware.

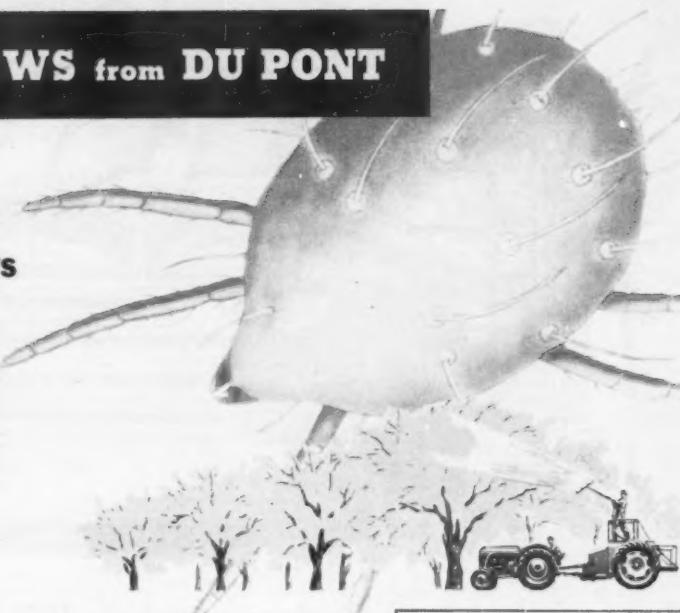
DU PONT EPN 300 INSECTICIDE

DU PONT CHEMICALS FOR THE FARM INCLUDE:

Insecticides: PARZATE[®] (Liquid and Dry), FERMATE[®], ZERLATE[®], Copper-A (Fixed Copper), SULFORON[®] and SULFORON[®]-X Wettable Sulfur . . . Insecticides: DEBNATE[®] DOT, MARLATE[®] Methoxychlor, LEXONE[®] Benzene Hexachloride, KRHNITE[®] Disilox Spray, EPN 300 Insecticide, Calcium Arsenate, Lead Arsenate . . . Wood and Brush Killers: AMMATE[®] 2,4-D, TCA and 2,4-T . . . Also: Du Pont Cotton Dusts, Du Pont Sprayer Sticker, PARAMONE[®] Fruit Drop Inhibitor, and many others. *REG. U. S. PAT. OFF.

*On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

Listen to Du Pont "CAVALCADE OF AMERICA"—
Tuesday Nights—NBC Coast to Coast



NEWS IN BRIEF

Up to 74% more scab-free fruit is the report from New York State apple orchards where "Fermate" fungicide proved itself far better than sulfur for scab control and fruit yield. "Fermate" controlled scab without injury to foliage, even in the hottest weather.

With peaches, "Zerlate" controls brown rot and keeps off the Japanese beetle at the same time. "Zerlate" has proved to be consistently excellent for control of brown rot and leaf spots on cherries, plums and peaches.

Last year's experience of grape growers again showed how superior "Fermate" is for control of black rot. Some of the highest yields and highest sugar content were reported from vineyards where it was used regularly.

For cherries, early apples and other early harvested fruit, DuPont "Marlate" methoxychlor insecticide is highly recommended. It gives excellent control of cherry fruit fly and fruit worm, plum curculio, apple tree weevil, codling moth, Oriental fruit moth and Japanese beetle. And it can be used close to harvest because the residue stays effective against insects, yet it is not hazardous to people who eat the fruit.

"Marlate" is ideal for control of insects on vegetables, too: cucumber beetle, Mexican bean beetle, tomato worm, corn earworm, leaf-hoppers, flea beetle, cabbage worms, looper and others. Moreover, "Marlate" is mild on the foliage, safe even on sensitive cucurbits, and residues of it are not hazardous to people.

